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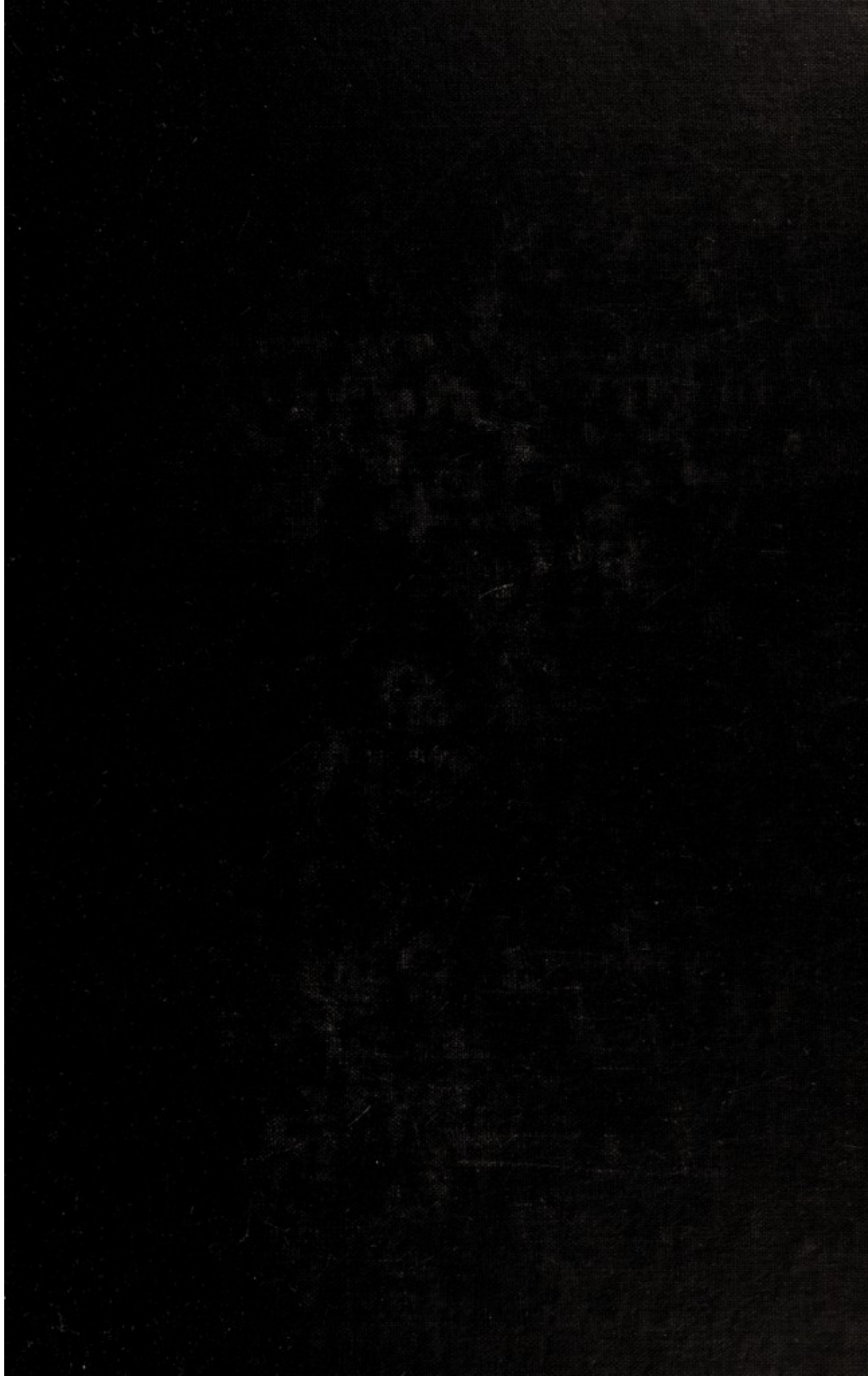
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LUNACY AND MENTAL DEFICIENCY.

THE
NINETEENTH ANNUAL REPORT

OF

THE BOARD OF CONTROL

FOR THE YEAR 1932.

PART I

(Presented pursuant to Act of Parliament.)

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LONDON

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NINETEENTH ANNUAL REPORT
OF
THE BOARD OF CONTROL
FOR THE YEAR 1932

PART I

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THE
NINETEENTH ANNUAL REPORT

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1933.

(FOR THE YEAR 1932.)

INTRODUCTORY.

MENTAL DISORDERS.

Mental Treatment Act.

Progress during the year in the development of the new facilities afforded by the Mental Treatment Act has inevitably been restricted by financial difficulties and the necessity of keeping fresh capital expenditure within the narrowest possible limits. But in spite of these difficulties there has been a steady increase in the number of out-patient clinics, and there is evidence that, with comparatively few exceptions, the facilities now offered for out-patient treatment are being increasingly utilized. In a few instances some disappointment has been expressed in regard to the class of patients presenting themselves for treatment; nor is it surprising that this should be so. It is natural that at the outset these clinics should attract the chronic neurotics who are the despair of every general hospital. But even for these cases something may be done, and there is no justification for regarding any clinic as a failure because at the start it does not attract the early case of mental disorder for which it is primarily intended. To make a clinic a success the psychiatrist in charge of it must secure the co-operation of the general practitioners in the district. While it would be unwise to make an introduction from a general practitioner a condition precedent of treatment at a clinic, it is clearly desirable that the psychiatrist in charge should have the fullest information at his disposal as to the patient's past medical history, and he in turn should keep the family doctor in touch with the development of the case. It is of vital importance to avoid any suggestion of encroaching upon the legitimate sphere of the family doctor; and while we realize that this interchange of reports must add to the burden of the work, we are convinced that no clinic can function effectively



unless the general practitioners feel assured that its object is to help them as well as their patients.

Out-patient work is never easy. It demands special qualities which some men, who may be admirable medical administrators, do not possess. When the clinic is staffed, as is generally the case, by the mental hospital, it should not be assumed that the work must invariably be undertaken by the Superintendent himself. The Superintendent should be generally responsible for the organization, but if the actual clinical work happens to be uncongenial to him, it is better that it should be delegated to other members of his staff than that he should personally undertake a duty for which he may feel himself temperamentally unsuited. Some share at any rate in the out-patient work is a valuable training for the younger men; and, in the case of the larger mental hospitals, there is much to be said for leaving the main burden of this work to the medical officer in charge of the admission unit, since it will familiarize him with those cases which may subsequently come under his care if the advance of the mental disorder necessitates a period of in-patient treatment.

The number of temporary patients admitted during the year to public mental hospitals continues to be disappointingly small. To some extent this is due to the natural reluctance of public assistance officers to substitute a new and somewhat more complicated procedure for one with which they are thoroughly familiar. But we fear it is also due in a large measure to the unwillingness of general practitioners to avail themselves of the new facilities for obtaining treatment without certification for non-volitional cases. In many areas it is and has long been the custom for practitioners to send patients who exhibit symptoms of mental disorder to the observation wards of a public assistance institution. It is argued that this practice not only avoids the risk inherent in recommendation or certification, but also lessens the chance of friction with the relatives by transferring to a public official a task which is admittedly invidious. But we feel that the doctors who so commonly resort to this practice do not sufficiently appreciate how much the patient may suffer, if they thus shirk their medical responsibilities. We recognize that a properly organized observation ward has advantages where there is genuine doubt as to the patient's mental condition. But when, as must often be the case, the need for in-patient treatment in a mental hospital is beyond question, it is clearly in the patient's interest that he should be sent with the least possible delay to the only place where effective treatment can be provided. In the early stages continuity of treatment is essential. To send an acute case to an observation ward from which transfer to a mental hospital is seen to be inevitable, means at best an avoidable delay in beginning treatment, and at worst a serious disturbance of the patient and an aggravation of his condition. The patient who is eligible for temporary treatment, whether he is stuporose,

confused or maniacal, is rarely a patient about whose need for admission to a mental hospital there can be any reasonable doubt. To send such a patient to an observation ward means the loss of precious time, and owing to force of habit and the inertia of the official machine, it will probably result in certification with its attendant consequences, although temporary treatment might be sufficient. It is rare to find any mental hospital without cases under certificate which might have been more appropriately dealt with as temporary patients ; and we feel sure that if doctors only realized how their poorer patients are prejudiced, the percentage of rate-aided temporary patients would soon approximate to that already obtaining in the case of private patients.

The number of voluntary admissions to public mental hospitals shows some improvement on the figures for the previous year, but there are still areas in which, owing to pressure on bed space or to other reasons, insufficient use has been made of this most important provision of the Mental Treatment Act. We are glad to learn that the Lancashire Mental Hospitals Board have now decided to reserve five per cent. of their beds for voluntary patients, and that at least this minimum number of early cases will receive treatment while they are still able to co-operate with the doctors. We realize the difficulties with which many authorities are faced owing to the shortage of beds, but there is no economy in refusing admission to voluntary patients, the great majority of whom, if they are refused admission while they can still appreciate the need for treatment, will at no distant time have to be received under certificate and to be retained in all probability for much longer periods. To attempt to save beds in this way is merely to defer the liability to the grave detriment of the patients, and ultimately at increased cost to the authorities concerned.

Accommodation in County and Borough Mental Hospitals.

The increase in the number of patients accommodated in public mental hospitals in 1932 was 1,314, the average for the quinquennium being 1,970. This is the lowest net increase recorded since 1919, but it must not be regarded as indicating any diminution in the incidence of mental disorder. The abnormally low figure for 1932 is due partly to an increase of 569 in the total of deaths, and partly to an increase in the number of mental patients in public assistance institutions. So far as this latter figure represents the transfer to such institutions of the quieter chronic patients whose condition does not call for active treatment, it is in accordance with the policy which we have been urging on local authorities in the interests of economy. With the present shortage of beds in mental hospitals there is obvious advantage in transferring to public assistance institutions any cases which can properly be dealt with in them. But there are indications that in some areas, notably in Lancashire, new cases, sometimes of an

acute type, are being kept in these institutions without any effective treatment because beds cannot be found for them in mental hospitals. This cannot fail to be prejudicial to the patient's chance of recovery, and we would urge local authorities to have a systematic review made of all chronic cases to see if more patients cannot be found whose transfer would release mental hospital beds for urgent new admissions. There is a natural tendency to retain in mental hospitals chronic patients who are useful workers, and it is obvious that no hospital could face the loss of any large proportion of the working patients without risking a marked rise in the maintenance rate. But the policy of retaining workers may be, and not infrequently is, carried too far, and there are many patients (particularly so called ward workers) who could be transferred, though at some inconvenience, without any appreciable effect on the maintenance rate. In any event the new cases must be regarded as having the first claim on the bed accommodation, and to retain chronics, who could often be usefully employed in a public assistance institution or boarded out, at the expense of new and urgent cases, is unfair to those needing the treatment which only a mental hospital can provide, and in the long run it is uneconomical.

During the year the total accommodation was increased by 2,268 beds. This figure is above the average of recent years, the main item in the increase being the new Swansea Mental Hospital, which was opened in December by H.R.H. the Princess Royal. The net result of these additions, after allowing for the increase in the number of patients under care, is to reduce the deficiency in beds to 607 for men and 1,110 for women, making a total deficiency of 1,717 beds. This figure is substantially better than last year, but while the position has eased for the time being it must not be assumed that the improvement is likely to continue. It is an accident that a slower rate of increase happens to have coincided with an unusually large number of added beds. The death rate has risen during the last two years, but it has only to fall again, as it easily may, to the 1930 level to upset the balance. Nor is the present deficiency a negligible matter. Expressed as a percentage of the total accommodation the figures appear trifling, and this would be so if the overcrowding was evenly distributed. But, in practice, an excess never is evenly distributed. The net figure is merely the difference between the aggregate surpluses and the aggregate deficiencies, and the number of hospitals which are overcrowded is much larger than the net total might suggest. The position is aggravated by the southward drift of the population. The tendency of London to expand outside the limits of the administrative county is throwing a heavy burden on the hospitals of Essex, Kent and Surrey. It should, however, be noted that the increase is not by any means in direct ratio to the transferred population, since the new townships are occupied in the main by young married people. The demand for mental

hospital beds is related to the adult and not to the aggregate population, since mental disorders are disorders of adult life. A singular result of this redistribution of the younger families is that while the total population of London is decreasing, and the child population is markedly decreasing, the number of mental patients is increasing and must continue to do so for many years to come. The age distribution of London's population is changing, and in spite of a slowly falling total, there is a steady increase in the numbers in the age groups from which mental patients mainly come.

Occupation Therapy.

We are glad to be able to record that during the past year increasing attention has been given to the subject of occupation therapy, and the growing interest in this most important aspect of mental hospital work has led the Royal Medico-Psychological Association to organize a short tour to Santpoort where, next to Gutersloh, occupation therapy has been developed to the fullest extent. The Commissioners have taken the opportunity during the year to discuss this subject with many Superintendents, but their reports indicate that there is still much misunderstanding of what occupation therapy really is and what objects it has in view. To teach a small group of quiet patients to make leather bags or other decorative objects to sell at the annual bazaar may be useful, but it is certainly not occupation therapy. The show case which some hospitals display with pride is no proof of success, and it may be definitely harmful if it is allowed to concentrate interest on the sale value of the work produced. Success or failure in occupation therapy is to be tested by the effect on the patients, not by cash sales. The object of the system is therapeutic and is to re-educate by employment, to establish good habits, and by interesting patients normally regarded as turbulent or unemployable, to stabilize them and to make them happier and more tractable. The lesson of Gutersloh and Santpoort once more confirms the view often expressed by the Board that turbulence and excitement are not inevitable but point to an indication of failure to handle the patient rightly. An idle patient ought to be regarded as a reproach to the hospital. Experiment has shown that practically every ambulant patient can be employed and is infinitely better and more easily controlled when he is employed. This is not mere theorising ; it has been proved beyond question, and we cannot believe that what has been accomplished in these two mental hospitals is impossible in England. We are well aware of the excellent work in this direction which has been done in a few English hospitals, but even in these cases the proportion of occupied patients, and in particular of difficult patients, falls far short of the results attained at Gutersloh and Santpoort.

There is, unfortunately, a widespread impression that the system of occupation therapy as organized in the best Continental

hospitals demands a largely increased nursing staff. This is not the case. It is true that the proportion of nursing staff to patients at Santpoort is much larger than is usual in any public mental hospital in England, but it was in fact just as large before Santpoort adopted the occupation therapy methods elaborated by Dr. Simon at Gutersloh. At Gutersloh itself, the home of occupation therapy in Europe, the nursing staff is actually less than that to be found in the more highly staffed of the English hospitals. We are convinced that the adoption of this system does not necessitate any substantial increase in the nursing staff apart from the employment of a few specialists, though it does involve a readjustment of duties and a change in the method of training the staff. If fully developed, occupational therapy may make further demands upon the medical staff; but on quite other grounds there is a case for an increase in the medical staff in mental hospitals, which in England is appreciably less than is usual in the best German and Dutch hospitals. But much might be accomplished with a very small addition to the existing staffs, and it is a mistake to suppose that occupation therapy is impossible without the appointment of the numerous costly and highly trained occupation-therapists who are to be found in some American hospitals. Occupation therapy can only be introduced gradually; there will be many mistakes and many disappointments. Hospitals cannot be revolutionized in a week or even in a year. But of the value and the success of the system we have no doubt whatever.

During the year, a small Office committee began a review of the whole question of occupation therapy, and have now presented a report. Further reference will be made to this subject in our next Annual Report.

Libraries.

In our last Report we commented on the value of libraries in mental hospitals, and we are glad to record that in response to our suggestion practically all the public mental hospitals which have not previously subscribed to the British Red Cross and Order of St. John Hospital Library have now agreed to do so. We have no doubt that the supplies of books received from the library will prove to be an ample return for the very modest contribution which membership entails. During the past year, Visiting Commissioners have paid special attention to the supply of books to the wards, and while their reports indicate that the number of books in circulation is generally not inadequate, in many cases little or no effort is made to give individual patients the books of their choice. We are convinced it would add greatly to the value of the hospital library and to the pleasure of the patients, if, as is already the practice in a few hospitals, a reading room could be provided to which the more trustworthy patients could be given access. Quite apart from the facilities which may

safely be given to parole patients, it should not be any more difficult to bring other patients to the library to select books for themselves than it is to bring them to the canteen to make their weekly purchases.

Hitherto it has too often been the practice to leave the control of the library in the hands of an officer selected because he had time to spare rather than because he had any qualifications for this work or any interest in it. This has had the results which might have been expected from such a haphazard method of choice. The successful conduct of a library demands special qualifications and experience, and we think visiting committees would do well to avail themselves of the advice and assistance of the skilled librarians who are now to be found in the municipal libraries. This has been done with success in many general hospitals, and although there are special difficulties inherent in the constitution of mental hospitals, we feel sure that the help of the municipal librarians would be most valuable and readily given. We believe also that there is scope in mental as in general hospitals for voluntary workers, especially if their work is under skilled direction.

Dietary.

One of the duties of every Commissioner when visiting a mental hospital is to inspect the feeding arrangements, and it is satisfactory to record that the dietary is, in the great majority of cases, good and varied and the cost commendably low. But there are still a few hospitals which work on a weekly dietary, instead of the more usual three weeks programme, with the result that the patients soon learn what dishes to expect on any given day of the week. There is no economy in this monotonous dietary, and if for any reason it is not found practicable to adopt the three weeks plan, we suggest as an alternative the introduction of an occasional "surprise" dish, which has been tried with success in several hospitals. The most popular dish tends to pall when it is known that it will reappear on the same day of the week for fifty-two weeks in the year. An element of uncertainty is an aid to appetite. Apart from monotony, the quality of the food is generally good. In the bigger hospitals a fish frier has been found very popular, for a generation accustomed to "fish and chips" cannot be expected to eat steamed cod with anything but reluctance. But while the food is almost uniformly good and abundant, there are still too many hospitals where excellent material and cooking are spoilt by want of a little care in serving the dinner reasonably hot. In general, we think that meals in the wards are more comfortable and homelike than meals in the dining hall. But where the older custom of meals in the hall is still observed, it is unnecessary and wasteful to put the food on the table before the patients come in. Such mistakes are uncommon, but they are not unknown, and there are still cases where good food is so badly served as to be made unappetizing.

Dress.

The fact that women Commissioners can now take part in statutory visits has resulted in greater attention being paid to the clothing of the female patients. We are glad to be able to report that an increasing number of hospitals are endeavouring to give the better patients some choice of colour of material and pattern. Anything which helps to restore a patient's self-respect is an aid to recovery, and in these days when attractive clothes can be produced cheaply there is no longer any excuse for the ugliness of many of the garments which used to be turned out in some hospital workrooms. If new patterns are procured by the sewing mistress it should be possible to produce in the workroom clothes comparable with those which can be bought outside. Failing which, we think that the experiment might well be tried of buying for the more careful patients some of the garments which can now be bought in great variety and at a very low price. Greater variety in dress helps to lessen the monotony which is the bane of institutional life, and it is a step towards recovery when a patient can be induced to take some interest in her appearance. We see no reason why mental hospitals should not adopt the system already successfully applied in some mental deficiency colonies of allowing patients their own marked under-clothing. It is true that some patients are so demented that they are indifferent to what they wear, but only advanced dementia would reconcile the average woman to the type of garments still worn in some hospitals. Even men, accustomed as they are to monotonous garb, will often take more care of a decent Sunday suit; and the installation of steam presses in many hospitals has been fully justified by the improvement in the condition of clothes and the resulting gain in self-respect among the patients. Clothing which no sane person would wear except under compulsion ought not to be inflicted on convalescent or other well-behaved patients.

Appointments to the Post of Medical Superintendent.

During the year 1932 there were no changes among the Medical Superintendents, a most unusual circumstance which has not occurred since 1909. But the number of changes during the present year is likely to be above the average, and this prompts us to remind Visiting Committees that we are always ready to co-operate in the difficult task of selection by helping to draw up the short list. We have consistently declined to take the responsibility of recommending any particular individual; but we are always ready, in consultation with the Committee, to indicate those candidates whose past record makes them worth interviewing. In any case, however, we would emphasize the importance of advertizing the vacancy and so of obtaining the widest possible field of selection. It is hardly necessary to stress the vital importance of a wise choice. The efficiency of a mental

hospital depends more on the personality, the outlook and the experience of the Superintendent than on anything else.

We recognize that Committees take pains to secure a Superintendent of proved administrative experience, but we would point out that much more than this is required in a Superintendent. He is not only in administrative control; he is also responsible for the general direction of all the medical work. His true position, indeed, would be more accurately described if he were styled "physician in chief." The extent to which the Superintendent undertakes actual day to day clinical work must of necessity differ in different hospitals; it depends, too, on the personal predilection of the individual. But however little clinical work the Superintendent undertakes, he must remain responsible for the oversight of all the medical and scientific work. In fact it is not too much to say that the inspiration of the real work of the hospital comes from him.

It is precisely in estimating the professional and scientific qualifications of the candidates that the Board's experience can be, as we believe, of the greatest value to Committees. Their experience in public administration makes Committees well fitted to assess the administrative qualities of the candidates. But they cannot be expected to possess the kind of experience necessary to estimate the professional qualifications of the candidates, a term by which we mean not merely their academic attainments, but their experience, their breadth of outlook and their grasp of the true principles of medicine. It is true that a good doctor is not necessarily a good administrator, though he can generally become one. But the Superintendent who is chosen solely for his administrative gifts too often allows himself to be absorbed in the routine of administration, which may result in his becoming merely the manager rather than the "physician-in-chief" of the institution.

MENTAL DEFICIENCY.

Accommodation for Mental Defectives.

On the mental deficiency side of our work satisfactory progress has been made during the year in spite of financial difficulties. The number of new beds in certified institutions added during the year was 2,299, but this figure represents the completion of schemes which were already in hand before the crisis. The postponement of some schemes, and the abandonment of others, will be reflected in the figures for succeeding years, and the general position is consequently not as good as last year's figure might suggest. The most important event of the year was the completion of Hortham Colony, which was opened by the Minister of Health on 29th April, 1932. This colony, which is the first complete colony to be constructed by a local authority, is intended to provide for the young and trainable cases from Bristol, but

cases will also be received under contract from Cardiff, Dorset and Bath. The total number of beds available at present is 600, but the administrative unit is planned to permit of expansion where necessary. Other important developments during the year were the opening of the first instalment of Surrey's colony at Botley's Park, of St. Catherine's colony near Doncaster, which is owned jointly by the County Boroughs of Barnsley, Dewsbury, Doncaster, Halifax, Huddersfield, Rotherham, and Wakefield, and of the first section of the colony for West Ham at South Ockendon.

The Board remain firmly convinced that the colony system, which provides the best means of training and employing the younger and employable patients, is economically sound. But they recognize that the necessity of limiting capital expenditure makes the full development of this policy at present impracticable. They have, therefore, during the year continued the policy outlined in their last Report of advising local authorities who are in urgent need of accommodation to begin with a limited number of villas and to leave the construction of the administrative unit and ancillary buildings till a later stage. Some authorities have objected that to make the villas self-contained for the time being necessitates extemporized arrangements for cooking and laundry work which are inconvenient and uneconomical in maintenance. In normal circumstances this objection would be sound. But the circumstances are not normal, and while makeshift arrangements in the nature of things cannot be expected to conduce to economy or efficiency in maintenance, there is at present no practicable alternative. At the same time, it would not be reasonable to be too critical of maintenance costs where buildings which have been designed solely as residential units have temporarily to perform functions for which they are imperfectly adapted.

The Admission of Mental Defectives to Institutions.

Consent of Parents.—The Board note that from time to time allegations are made that consent to the admission of children to certified institutions has been obtained without the parents being fully informed of the nature of the institution to which the patients are to be sent. How far these allegations have any foundation it is impossible to say. In no case has any positive proof been obtained that consent has been improperly obtained. But the frequency with which such allegations have been made is in itself disquieting, and the Board desire to take this opportunity to emphasize their view that anything approaching a want of candour in dealing with the parents of defectives is indefensible. They recognize the difficulties with which authorities and their officials are faced. The parents of defectives are themselves sometimes of such low mentality that they are incapable of appreciating the need for institutional care for their children.

But the Mental Deficiency Act expressly provides that the judicial authority may make an order without the consent of the parents if that consent is unreasonably withheld. It is true that there are judicial authorities who are reluctant to exercise this power, but it is better in the end that individuals should suffer by failing to obtain the care that they need than that there should be the slightest ground for the suggestion that consent has been obtained by disguising the true nature of the steps which it is proposed to take.

Another complaint repeatedly made is that the parent is left under the impression that the defective child is being removed for one year only. This is no doubt due to failure on the part of the responsible authorities to explain that the initial period of detention is one year, but that the Order is likely to be renewed for further periods thereafter.

Requirements of the Act.—As there is apparently some misapprehension on the point, it is desirable to add that it is no part of the Board's duty to seek out defectives with a view to their certification under the Acts; nor have they done so. The duty of ascertainment rests entirely with the local authorities, and while the Board are bound to advise authorities on individual cases, if their advice is sought, it would seem not to be sufficiently realized that no defective can be sent to any institution, unless (a) "placed" there by the parents or guardians under Section 3, or (b) sent by a Court under Section 8 or by the Home Secretary under Section 9, or (c) sent by the order of a judicial authority made after the hearing of a petition. It is unfortunate that twenty years after the passing of the principal Act it should be necessary to re-state these elementary facts, but the misconception which still exists in some quarters compels the Board to state explicitly that though they have the power to discharge, they have no power to send any person, in any circumstances whatever, either to the State Institution or to any other.

Social Intercourse between Patients and Normal Persons.

One of the problems confronting those who are responsible for the conduct of mental deficiency institutions is the problem of maintaining some contact between the patients and the outside world. The higher grade patients, who form the majority, are often painfully conscious of their disabilities, and the sense of inferiority is deepened by their sense of isolation from their more fortunate contemporaries. Anything which helps to lessen the sense of isolation and inferiority is most valuable. Games are a great help in this way, if matches can be arranged with teams of normal boys or girls. Where scouting and guiding have been organised, as they are in many colonies and as they should be in all colonies, camping and other means of association with

normal children should be encouraged. In the case of defectives, the great majority of whom, whether under supervision or guardianship, must live in the community, there is no necessity to ostracize those who need institutional care. Degrees of social adaptability vary, and there will always be patients for whom isolation is inevitable; but many are quite able to join in games with normal boys and girls, and they will benefit by doing so. Anything which tends to normalize their life is beneficial, and though in the case of adults the difficulties of arranging any social intercourse will be greater, they are not insuperable. We are convinced that much more might be done than is done at present to maintain some contact with the outside world and to break down the idea, far too prevalent at present, that the institutional defectives are incapable of a limited social intercourse.

FINANCE.

The financial crisis and the need for stringent economy in public expenditure have brought into prominence the relations between the Board of Control and Local Authorities in regard to expenditure on the Mental Health Service, and it will not be out of place to refer to one or two important aspects of this question in the present Report.

There appears to be an impression in some quarters that the Board of Control have followed in regard to expenditure on the Mental Health Services a policy different from that which has been adopted in regard to other health services. This is a misapprehension. As has been frequently explained in Parliament, the Board's general policy in finance and other questions of principle is controlled by the Minister of Health. When the present financial crisis developed, the Board sought and obtained from the Minister directions as to the policy to be followed. Those directions were in harmony with the policy laid down regarding the other health services; the broad principle being that, while the crisis did not necessitate a lowering of the existing standards of the Service, the utmost vigilance should be exercised to minimize expenditure at the present time and to limit capital outlay to extensions or developments that were really essential.

It has, nevertheless, been suggested that the Board of Control have put pressure upon Local Authorities to embark on unnecessary expenditure. The Board were, however, able, as a result of correspondence with one of the Associations of Local Authorities, to show that the facts supplied by Local Authorities themselves proved that the suggestion was unfounded. On the contrary, the Board have had much difficulty in the past year in persuading certain Local Authorities to curtail or to defer their schemes of building.

The view of Local Authorities on the question whether they are being pressed by the Board to incur unnecessary expenditure or obstructed by the Board in undertaking necessary improvements, depends not unnaturally upon the attitude of individual Local Authorities towards the Mental Health Services. There are, of course, many progressive Authorities; but, for the most part, this service is the least popular of those administered by Local Authorities, and their views on expenditure for it are coloured accordingly. It is also true that this service is probably the least known, and quite extraordinary misapprehensions are current regarding it. Thus, to quote a single example, the Private Members' Committee on Public Expenditure (page 96 of Report) stated that the average cost of a mental patient was £500 per year. This was widely quoted without question in the Press. The actual statistics published by the Board in their recent Reports and in the present Report show that the correct figure would be nearer to £50 a year.

RETIREMENT OF COMMISSIONERS.

Mrs. Ellen Frances Pinsent, C.B.E., Hon. M.A.—The Board sustained a great loss by the retirement at the end of July of Mrs. E. F. Pinsent. Her interest in the welfare of the mentally defective dated back to a period even before the appointment in 1904 of the Royal Commission, of which she was the only woman member. She was associated with the Board first as an Honorary Commissioner in 1914 and subsequently as a Commissioner, in succession to Miss Dendy, and later as a Senior Commissioner when the Board was reconstituted in 1930 after the passing of the Mental Treatment Act. No woman in the country surpassed her in knowledge and experience of mental defect in all its aspects, and the steady development of the colony system owes its inspiration mainly to her enthusiasm and devoted and indefatigable labour. Her place has been taken by Miss Ruth Darwin, who has been associated with the work of the Board as an Honorary Commissioner since 1921 and as a (part-time) Commissioner since January, 1930.

Dr. Robert Cunyngham Brown, C.B.E.—At the end of the year the Board lost the services of Dr. Cunyngham Brown, who had been a temporary Commissioner since 1926, though his association with psychological medicine, interrupted by a period of war service and by service in the Ministry of Pensions, dated back to his appointment in 1912 as a Deputy Commissioner of the General Board of Control for Scotland. Owing to the need for economy the vacancy caused by the retirement of Dr. Cunyngham Brown is not at present being filled.

We wish both Mrs. Pinsent and Dr. Cunyngham Brown long and happy enjoyment of their well-earned leisure, and we hope that their experience and knowledge will still be made available, though in less strenuous fashion, for the benefit of the mentally afflicted, to whose welfare so much of their life and thought has been devoted.

The Board of Directors of the Hospital for the Insane, in their report for the year ending 31st December 1891, have the honor to acknowledge the assistance rendered by Mrs. Pinsent and Dr. Cunyngham Brown in the management of the Hospital during the year. Mrs. Pinsent, who has been in charge of the Hospital since 1881, and Dr. Cunyngham Brown, who has been in charge of the Hospital since 1885, have both rendered valuable assistance in the management of the Hospital during the year. Mrs. Pinsent has been in charge of the Hospital since 1881, and Dr. Cunyngham Brown has been in charge of the Hospital since 1885. Both have rendered valuable assistance in the management of the Hospital during the year.

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I.—MENTAL DISORDERS.

(Lunacy and Mental Treatment Acts, 1890 to 1930.)

NUMBERS UNDER CARE.

On 1st January, 1933, the number of persons suffering from mental disorder notified as under care in England and Wales was 148,775, an increase of 2,079 during the preceding year; the average annual increase for the five years ending 1st January, 1933, being 1,921. It is desirable again to draw attention to the facts that numbers relating to voluntary and temporary patients are now included throughout this section of the Report; and that, for the purpose of comparison, the numbers for the years prior to the operation of the Mental Treatment Act, 1930, have been corrected by the inclusion of voluntary cases, which had until then not been included.

The percentage distribution of the sexes—males 44·2, females 55·8—is an increase of 0·1 per cent. in the proportion of males.

The increased number of notified patients has no necessary connexion with the incidence of mental disorders in the general population, being merely the increase shown by the excess of the admissions over the combined deaths and discharges. It is desirable to emphasize this fact on account of the erroneous deductions that are sometimes drawn from such increases.

Summary of Extent to which the Mental Treatment Act, 1930, was used during 1932.

Out-patient Treatment.—This subject was discussed at length in our last Report (pages 48–51).

In the year now under review the position remains substantially the same as indicated last year. With the help of those responsible at the sixty or more centres at which this work is undertaken, we hope on a future occasion to give figures illustrative of the work done in this important sphere.

Voluntary In-patient Treatment.—Having regard to the statistics of the admissions (2,160 in number) to Registered Hospitals and to metropolitan and provincial Licensed Houses, to the percentages of the cases (65, 46 and 60 respectively) admitted as voluntary patients, and to the proportion (68 per cent.) of the departures and discharges from these institutions of patients who were upon the voluntary status, it is probably fair to assume that, in these institutions, voluntary treatment has nearly reached the limit to which it can be expected to attain. There are reasons why it is scarcely to be expected that so high a proportion ever can be reached in the County and Borough Mental Hospitals where, for the year 1932, the proportion of voluntary patients among the admissions (22,271) was 10 per cent. The corresponding percentage for the previous year was 7. If the

SUMMARY OF PERSONS SUFFERING FROM MENTAL DISORDER, 1ST JANUARY, 1933.
A.—ARRANGED ACCORDING TO CLASS.

WHERE MAINTAINED on 1st January, 1933.	PRIVATE.			RATE-AIDED.			CRIMINAL.			TOTAL.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
	In Institutions provided by Local Authorities :—											
County and Borough Mental Hospitals	6,097	3,054	9,151	48,305	65,120	113,425	38	15	53	54,440	68,189	122,629
Other Premises	16	35	51	77	98	175	—	—	—	93	133	226
In Registered Hospitals	969	1,476	2,445	—	—	—	1	—	1	970	1,476	2,446
In Licensed Houses :—												
Metropolitan	379	723	1,102	21	31	52	—	—	—	400	754	1,154
Provincial	734	1,060	1,794	—	—	—	—	—	—	734	1,060	1,794
In Hospitals and Nursing Homes approved under the Mental Treatment Act :—												
Hospitals	—	—	—	—	—	—	—	—	—	—	—	—
Nursing Homes	5	23	28	—	—	—	—	—	—	5	23	28
In Naval and Military Hospitals	282	—	282	—	—	—	—	—	—	282	—	282
In Criminal Lunatic Asylum (Broadmoor)	—	—	—	2	—	2	627	213	840	629	213	842
In Public Assistance Institutions and Public Health Hospitals	—	—	—	6,533	8,427	14,960	—	—	—	6,533	8,427	14,960
In Private Single-Care	87	251	338	—	—	—	—	—	—	87	251	338
In Outdoor Relief...	—	—	—	1,568	2,508	4,076	—	—	—	1,568	2,508	4,076
TOTAL	8,569	6,622	15,191	56,506	76,184	132,690	666	228	894	65,741	83,034	148,775
Increase during 1932	...	...	...	...	...	...	...	...	...	...	...	...
...	61*	1*	62*	1,137	1,008	2,145	...	...	...	73*	26	47*
...	11*	7	4*	1,065	1,014	2,079	...	...	...	992	976	1,968
Total	1,065	1,014	2,079	Average Annual Increase in the five years 1928-1933			...	...	...	916	1,005	1,921
				Private			Rate-aided					
				Criminal			Criminal					
				Total			Total					

* Decrease.

advance during the twelve months looks small, the advances obtained by individual mental hospitals—notably Springfield, Gloucester, Plymouth, West and East Sussex, North Riding, Ipswich, Leicester City, Portsmouth, Sunderland and Cardiff, whose percentages range from 20 to 47—show what may be expected towards promoting voluntary treatment and diminishing certifications.

Temporary Treatment without Certification.—In only two per cent. of the total direct admissions during 1932 was this procedure used. It was notably higher in places to which only private patients are admitted—the percentages for the Registered Hospitals, metropolitan and provincial Licensed Houses, and Nursing Homes approved under the Act being respectively 7, 7, 6 and 17. Moreover, when the figures of individual institutions are analysed, it appears likely that such percentages as 6 and 7 will be doubled before very long. However, in this connexion the most notable example during the year is to be found among the public mental hospitals, where it may be observed that of the 100 patients admitted to the Derby Borough Mental Hospital no less than 34 were received as temporary patients.

The foregoing commentary upon the extent to which use has been made of the procedures authorized by the Mental Treatment Act may invite a question as to what, generally speaking, should be the proportionate use of these procedures and of certification ; in fact, on various occasions the question has been asked. It is too early in the operation of the Mental Treatment Act to hazard any dogmatic statement upon the matter. But the question, in the main, narrows itself down to the practice and proportions which ultimately should be expected to obtain in public mental hospitals which serve an area where there is a well organized mental health service. It may be helpful and interesting to express in figures the experience in an area which, though populous, is comparatively small and compact and whose procedure, because it is only quite recently that it has possessed a mental hospital of its own, is being developed under the Mental Treatment Act untrammelled by traditions under which certification was in every case a necessary preliminary to in-patient treatment. The area in question is the County Borough of Swansea with its new mental hospital, into which patients began to be admitted on the 24th of November, 1932. From that date to nearly the end of the first half of the current year, 160 direct admissions were received of which 57 were voluntary, 17 were temporary and 86 were certified patients. A considerable number (49) of the certified cases were not really new admissions in the true sense of that expression, but were cases of long standing mental disorder who, in default of proper mental hospital accommodation, had been housed for at least a year in the Public Assistance Institution.

If these are deducted from the calculation, it follows that, of 111 new admissions, 51 per cent. were admitted as voluntary patients, 15 per cent. as temporary patients and only 34 per cent. under certificates; and further that, of the 37 under certificates, 21 per cent. were received direct from their own homes, upon urgency orders as provided for rate-aided patients under Section 17 of the new Act. These proportions are strikingly close to those we have ventured all along to hazard as likely to prove obtainable when the Act is fully utilized. They encourage us to express the belief that not less than 60 per cent. of all rate-aided patients requiring in-patient treatment for mental disorder should, and ultimately will, receive it without resort to certification.

These highly satisfactory figures are the fruit of close co-operation of Public Assistance officials and the general practitioners in the district and of the pains taken by the authorities of the mental hospital to explain to them the proper method of securing the advantages which the Mental Treatment Act provides.

CLASS, STATUS AND DISTRIBUTION.

Class.

Private patients on 1st January, 1933, numbered 15,191 (males 8,569, females 6,622). There was an increase of 141 in the voluntary cases, with decreases of 13 and 190 in the temporary and certified cases respectively, yielding a net decrease of 62 in this class. Included here are 4,994 Service and ex-Service patients—37 fewer than a year ago.

Patients in the Naval and Military Hospitals (Yarmouth 222, Netley 60) are also included among the private patients, as are the 35 persons found of unsound mind by inquisition who were resident in institutions. There were in addition 86 persons (males 46, females 40) so found by inquisition who, not being resident in institutions, are not notified to us and so do not fall within the scope of our statistics. The total number of these inquisition cases continues to show a steady decrease year by year, due to the lessened use made of this mode of procedure.

Rate-aided patients on 1st January, 1933, numbered 132,690 (males 56,506, females 76,184) or 89.2 per cent. of all the notified patients. They increased by 2,145 during 1932, as compared with an average annual increase of 1,968 during the last five years. There were increases of 508 and 1,649 in the voluntary and certified patients respectively and a decrease of 12 in the number in the temporary status.

Criminal patients on the same date numbered 894 (males 666, females 228), a decrease of 4 during the year.

Transfers from Class to Class.—During 1932, 720 rate-aided patients (males 363, females 357) were transferred to the private

class ; 256 private patients (85 males, and 171 females) were transferred to the rate-aided class ; and 49 criminal patients were retained and classed as rate-aided patients on the expiry of their sentences or on their discharge as criminals.

Status.

On the 1st January, 1933, at the end of the second year of the operation of the Mental Treatment Act, 1930, the following patients were under care in each status :—

Status.	Males.	Females.	Total.
Voluntary	1,139	1,390	2,529
Temporary	69	141	210
Certified	64,533	81,503	146,036

Regradings to another Status.—During the year, 743 changes in status within the institutions took place as follows :—

From—	To Voluntary.	To Temporary.	To Certified.
Voluntary	—	37	248
Temporary	130	—	113
Certified	205	10	—

If a certified patient, whether admitted under certificate or certified subsequently, should pass into a mental condition rendering him eligible for treatment under Section 5 of the Mental Treatment Act, there can be obviously little or no advantage in making him a temporary patient. Therefore the number of certified patients re-graded into the temporary status always will be small. There were ten such instances during 1932. Quite otherwise ought the position to be regarded in those cases in which a certified patient so far improves as to be able to appreciate what is being done for him and to express a wish to remain for continuation of treatment : provided that this improvement can be regarded as sufficiently stable, and provided that there are no special circumstances militating against this course, such a person, in our judgment, ought to be made a voluntary patient. In other words, as the intention of the Mental Treatment Act gradually comes into full operation, the majority of mental patients who leave their place of treatment recovered or improved will do so upon the footing of a voluntary patient. How far from attainment this ideal at present is can be gathered from the fact that of the 14,349 absolute departures and discharges which took place from all forms of care during 1932, 74 per cent. were

under certificates at the time they left their places of treatment. In this respect the Registered Hospitals and Licensed Houses, in which (grouping these two forms of care together) the corresponding percentage was 28, offer a marked contrast to the County and Borough Mental Hospitals where 84 per cent. of the 11,799 absolute departures and discharges were under certificates at the time they left the hospital. This dissimilarity in practice, we trust, will disappear to a great extent at no very distant date.

Distribution.

The distribution of all patients on the 1st January, 1933, can be seen by reference to the two Summaries (A and B) on pages 16 and 17, but it may be pointed out that over 82 per cent. of them were resident in County and Borough Mental Hospitals. Further, over 55 per cent. of the voluntary patients were resident in these institutions. On the other hand, the voluntary patients in Registered Hospitals and Licensed Houses formed 16·2 per cent. of the patients under care in those establishments, while the similar percentage for County and Borough Mental Hospitals was 1·1.

Temporary use of a Ward in King's College Hospital as an Annexe of the Maudsley Hospital.—The Board regret that during the year 1932 they were not asked to approve any proposals under Section 6 of the Mental Treatment Act for the reception of mental patients into General Hospitals. But we record with much satisfaction that an arrangement was made between the London County Council and King's College Hospital under which the Pantia Ralli Ward in the Hospital was opened for the reception of 30 female patients. Under this arrangement the ward is treated as an annexe of the Maudsley Hospital, who provide the medical equipment as well as the requisite medical attention and nursing for the patients. The patients are chosen so far as possible from those who are suffering from physical as well as mental ailment. We welcome the collaboration between these two important institutions and we are glad that this advance has been made in the treatment of mental illness in a General Hospital, particularly as the unit has found a place in a Hospital with a medical school.

MOVEMENT OF PATIENTS.

Admissions, Discharges, Transfers to other Care, and Deaths in 1932.—Owing to the absence of detailed information of the movement of the persons suffering from mental disorder in Public Assistance Institutions and Public Health Hospitals, and of those in receipt of Outdoor Relief, particulars as to the persons in these forms of care are not included below.

The subjoined statement includes patients of each status (voluntary, temporary and certified) :—

Resident on 1st January	...	...	...	...	128,383
Direct Admissions	...	...	...	...	25,560
Indirect Admissions (excluding regradings)	...	...	...	...	2,338
					156,281
Discharged and Departed—					
Recovered	...	...	...	...	8,153
Relieved	...	...	...	...	5,109
Not Improved	...	...	...	...	1,087
*By operation of law	...	...	...	...	172
“ Not now Insane ”	...	...	...	...	11
Transferred (under order) to other care	...	...	...	...	2,265
Died	...	...	...	...	9,745
Remained at end of year	...	...	...	...	129,739
					156,281

The daily average number resident was 128,280 (males 57,019, females 71,261)—the proportion of those resident in County and Borough Mental Hospitals being 94·5 per cent.

Direct admissions were 25,560 (males 11,304, females 14,256) of whom 87·1 per cent. were admitted to County and Borough Mental Hospitals. The proportion per cent. of these admissions in each status was—voluntary, 17·1 ; temporary, 1·9 ; and certified, 81·0.

The ratio of admissions per 10,000 of the population (aged 16 years and upwards) of England and Wales was 8·49 (males 7·98, females 8·95). This ratio shows an increase of 0·37 per 10,000 on the previous year.

First admissions during 1932 numbered 20,104 (males 9,104, females 11,000) or 78·7 per cent. of all the direct admissions. Of these first admissions 3,369 (16·8 per cent.) were voluntary patients, 448 (2·2 per cent.) were temporary, and 16,287 (81·0 per cent.) were certified.

Discharges and Departures—that is, certified and temporary patients discharged, and voluntary patients who departed, from statutory care (as recovered, relieved or not improved), numbered 14,349 (males 5,988, females 8,361). Of these, 8,153 were discharged as recovered, yielding a recovery rate, calculated on the direct admissions, of 31·9 (30·6 for males, 33·0 for females). The discharges as relieved and not improved numbered respectively 5,109 and 1,087 ; and if these and the 11 discharged on

* Either by reason of irregular admission documents, lapsing of reception orders (s. 38, Lunacy Act, 1890), or discharges under s. 85.

admission as not now insane and the 96 cases discharged after escape (section 85) are added to the recoveries, it shows that the total absolute discharges and departures during the year were 56.6 per cent. of the direct admissions. The percentage distribution of these absolute discharges and departures was—certified, 74.1; temporary, 1.6; voluntary, 24.3.

Deaths numbered 9,745 (males 4,510, females 5,235). They were 586 more than in the previous year; and the death-rate (7.6 per cent. of the daily average number resident) was 0.4 above the rate for 1931. The rate for males was 7.9 per cent.; and for females 7.4.

Transfers to other Care, etc.—During the year 2,338 patients were transferred to another institution or to or from single-care, or were (in a few instances) indirect admissions following discharge by operation of law. Such cases, as well as the regradings detailed on page 20, are technically termed *indirect* admissions and call for no further comment.

Numbers remaining under Care.—The number of patients remaining under care (with the exception of those in Public Assistance Institutions and Public Health Hospitals and those in receipt of Outdoor Relief) on the 1st January, 1933, was 129,739 (males 57,640, females 72,099), an increase of 1,356 patients during the year.

COUNTY AND BOROUGH MENTAL HOSPITALS.

(*Ninety-nine in number.*)

1. *Accommodation.*

On the 1st January, 1933, the number of patients in County and Borough Mental Hospitals was 607 males and 1,110 females in excess of the recognized bed space provided.

The deficiency of accommodation disclosed by the foregoing figures is discussed in detail in the Introductory to this Report (see page 3), but it may be mentioned here that during 1932 we approved plans of proposals which are estimated to provide 979 additional beds. Details of these proposals are set out below.

Mental Hospital.	Nature of Scheme.	No. of patients' beds provided
Carmarthen ...	Adaptation of medical superintendent's old house	20
Chester C. (Upton)	Modernization of 1829 buildings ...	60
Derby C. ...	Conversion of medical superintendent's old house	25
Essex :		
Brentwood ...	Conversion of cubicles over old laundry	28
Severalls ...	Extensions	180
do. ...	Temporary buildings	56
Leicester C. and Rutland ...	Home for night nurses	24
Warwick C. ...	Nurses' home	45
Yorks, W.R. (Wadsley) ...	Admission hospital	100
Birmingham :		
Winson Green	Adaptation of :— (1) "Tea Room" at "Uffculme" (2) Lodge Road fever hospital ...	48 224
Hull	Nurses' home	60
Ipswich ...	Extension to male infirmary ward ...	19
Norwich ...	Villa	40
Plymouth ...	Admission hospital	50

2. *Opening of Swansea Mental Hospital by H.R.H. The Princess Royal.*

H.R.H. The Princess Royal honoured the Borough by paying a visit on the 8th December, 1932, and opening the new Hospital. A large gathering of local residents and many representatives of public bodies assembled to welcome Her Royal Highness, and their subsequent inspection of the buildings also indicated their interest in the important addition which this hospital makes to the medical resources of the district.

The Hospital is situated at Cockett, on a level plateau 500 feet above sea level. The foundations of most of the Institution were completed in October, 1917, but work was then suspended until November, 1928, when building recommenced. The grounds extend to over 100 acres. The present buildings provide accommodation for 300 patients of each sex but the administrative units are designed to serve an ultimate total of 800 patients. In the main building is situated the William Owen Hall, so named in recognition of the services rendered by the Chairman of the Committee. The Hospital comprises several detached units—one with beds for 25 patients of each sex for the reception and intensive treatment of new admissions. The Princess Royal has graciously consented to allow this to be named the Princess Mary Ward. There are two convalescent homes, each for 20 patients, a Nurses' Home for 65 nurses, and a Church. The original

Architects were Messrs. George T. Hine & Pegg, but upon their death the work devolved upon Mr. E. E. Morgan, Architect of the Town Council.

3. *Dissolution of Agreement to Unite.*

The Agreement to Unite dated 22nd November, 1910, entered into between the Visiting Committee of the County Borough of Swansea and the County Borough of Merthyr Tydfil has, with the consent of the Board, been dissolved. Under the terms governing the dissolution, the new mental hospital at Cockett becomes the property of the Swansea Corporation and they have agreed to reserve, for a period of ten years, 150 beds therein for the use of Merthyr Tydfil patients.

4. *Numbers under Care.*

On the 1st January, 1933, the County and Borough Mental Hospitals contained 122,629 patients, as follows:—

Status.	Males.	Females.	Total.
Voluntary	676	724	1,400
Temporary	52	87	139
Certified	53,712	67,378	121,090
Total	54,440	68,189	122,629

The above numbers show increases of 570 and 764 in the voluntary and certified patients respectively and a decrease of 20 in the temporary patients.

The number of patients in each class was—private, 9,151; rate-aided, 113,425; criminal, 53.

5. *Movement of Patients.*

Direct Admissions.—During 1932 there were 22,271 direct admissions as shown below:—

Status.	Males.	Females.	Total.
Voluntary	1,042	1,253	2,295
Temporary	115	222	337
Certified	8,729	10,910	19,639
Total	9,886	12,385	22,271

If the above figures are compared with the direct admissions in 1931, it will be seen that in 1932 there was an increase of 800 in the voluntary admissions, of 568 in the certified, and a decrease

of 42 in those of the temporary status, resulting in a net total increase of 1,326 in the direct admissions.

First Attack Cases.—Particulars of these admissions during 1932 are not yet available, but it may be stated that, of the direct admissions in 1932, nearly 22 per cent. (voluntary 27 per cent., temporary 9 per cent., and certified 21 per cent.) had previously been dealt with under the Lunacy and Mental Treatment Acts.

Departures and Discharges.—The following were the absolute departures and discharges during 1932 :—

At time of discharge.		Males.	Females.	Total.
Status.	Mental Condition.			
Voluntary	{ Recovered ...	339	507	846
	{ Relieved ...	278	309	587
	{ Not Improved	133	156	289
		} 1,722 (14·6%)		
Temporary	{ Recovered ...	19	74	93
	{ Relieved ...	9	39	48
	{ Not Improved	7	6	13
		} 154 (1·3%)		
Certified	{ Recovered ...	2,569	3,598	6,167
	{ Relieved ...	1,298	1,951	3,249
	{ Not Improved	225	282	507
		} 9,923 (84·1%)		
Total ...		4,877	6,922	11,799

The percentage of total discharges (recovered, relieved, and not improved) to the admissions was 53·0 and of recoveries alone was 31·9 (males 29·6, females 33·7).

Deaths.—During the year, 9,154 patients (4,273 males and 4,881 females) died.

The proportion per cent. of deaths to the daily average number of patients resident was 7·6 (males 7·9 and females 7·2). This was 0·4 above that of the previous year, and equalled the mean percentage for the preceding ten years.

The number of post-mortem examinations was 5,935, being 64·8 per cent. of the deaths. The proportion of these examinations varied from 90 per cent. or over at the Cumberland, Napsbury, Monmouth, Notts County, Burntwood, Cheddleton, Barnsley Hall, Wadsley, Winson Green, Derby Borough, Gateshead, Leicester City and Sunderland Mental Hospitals to such low percentages as 17·8 (Carmarthen) and 10·9 (Lancaster).

Service Patients.—On the 1st January, 1933, the number of Service patients resident in County and Borough Mental Hospitals was 4,354, a decrease of 21 during the year. On the same date there were also 394 ex-Service patients (8 less than a year previously), the cost of whose maintenance is defrayed by our Board from a special Exchequer grant (*see* 11th Report, page 31).

6. *Use of Voluntary and Temporary Treatment.*

Since the County and Borough Hospitals accommodate more than 80 per cent. of the total number of persons notified as suffering from mental disorder and receive over 90 per cent. of the total direct admissions annually, it is important to note the extent to which these forms of treatment are employed. With respect to the admission of voluntary patients—there were 17 hospitals into which no voluntary patient was admitted during 1931: and of these, there were 14 hospitals who had the same unenviable record for 1932. Of the hospitals which have begun to receive voluntary cases, 20 did so to the extent of 5 per cent. of their direct admissions, 18 in proportions ranging from 5 to 9 per cent. The following 19 did so to the extent of 10 to 14 per cent. ; Bucks, Cambridge, Chester, Cornwall, Park Prewett, Herts, Barming Heath, Norfolk, Wells, Cheddleton, Suffolk, Brookwood, Netherne Warwick, Isle of Wight, East Riding, Brighton, Derby Borough, and Nottingham City. At 12 (Devon, Dorset, Knowle, Narborough, Oxon, Wakefield, Rubery Hill, Exeter, Gateshead, Hull, Newport, and Norwich) the proportions varied from 15 to 19 per cent. At 11 hospitals, the percentages of voluntary patients among the direct admissions varied from 20 at Springfield to 24 at Gloucester and Plymouth, 26 at West Sussex, 29 at East Sussex, North Riding and Ipswich, 37 at Leicester City, 39 at Portsmouth, 41 at Sunderland, and no less than 47 at Cardiff. In our view the proportions in the last eleven cases are entirely encouraging, and highly creditable to those who have attained them. This last remark does not necessarily imply that some of the lower percentages are not equally creditable: it is within our knowledge that at certain hospitals, with which is associated much activity in out-patient treatment, cases of some severity have been allowed to continue and to complete their treatment as out-patients who, in many centres, probably would have been admitted as voluntary in-patients. The City of London, Scalebor Park and Ewell mental hospitals, where the corresponding percentages were 50, 59 and 70 respectively, were not grouped with the last named 11 hospitals, because conditions which obtain at these three render comparison meaningless.

As regards temporary treatment this procedure was not used in 40 mental hospitals. Of the remainder, it is sufficient to say that in 43 of these institutions the admission of temporary patients accounted for less than 5 per cent. of the total admissions; at 13 the percentages ranged from 5 to 9; at the City of London it was 13 per cent.; and at Derby Borough, where in the previous year it amounted to 26 per cent. of the admissions, in 1932 it rose to no less than 34 per cent.

7. *Appointment of Medical Superintendent.**County Borough of Swansea.*

Although no change occurred during 1932 among existing superintendents, one new appointment was made in consequence of the completion and opening of the new mental hospital at Cockett for the County Borough of Swansea. Following advertisement of the post, the Committee were fortunate in receiving applications from a number of well-qualified candidates. In the result, their choice rested upon Dr. James Stuart Ian Skottowe (M.D. Glasg., D.P.M. Univ. Lond.) who, at that time, was Deputy Superintendent at the City of Cardiff Mental Hospital, and responsible for a share of the out-patient work in the Cardiff Royal Infirmary. Besides having had valuable general hospital experience at Glasgow, and having held a post at the Royal Mental Hospital in that city, he had studied psychological medicine at Boston and at Harvard University in the United States.

8. *Finance.*

The total expenditure on the upkeep of the County and Borough Mental Hospitals in England and Wales, and on the maintenance, supervision and treatment of the patients in them, during the financial year ended 31st March, 1932, amounted to £8,218,164, comprised of the following items:—

	£
Maintenance	6,921,692
Building and repairs	1,277,549
Land purchased	12,205
Land rented	6,718
	<hr/>
	£8,218,164
	<hr/>

The above figures do not include any expenditure on new institutions as yet unoccupied.

Compared with the preceding financial year, the only increase in expenditure was one of £71,286 in the cost of building and repairs, while there were decreases of £91,137 in the cost of maintenance; of £1,087 in the outlay on land; and of £432 in the amount paid for land rented. The net result was a decreased expenditure of £21,370.

Average Weekly Cost.—The average weekly cost per head of maintenance, which excludes the cost of repairs, additions and alterations, was as follows:—

	s.	d.
In County Mental Hospitals	20	8 $\frac{5}{8}$
In Borough Mental Hospitals	23	10 $\frac{1}{4}$
In both taken together	21	5 $\frac{7}{8}$

The average weekly cost per head of the various items are contrasted in the following table:—

DETAILS OF THE AVERAGE WEEKLY COST.	County Mental Hospitals.		Borough Mental Hospitals.	
	1930-31	1931-32	1930-31	1931-32
	s. d.	s. d.	s. d.	s. d.
Provisions not supplied from institution garden and farm, but procured from outside the institution (including malt liquor in ordinary diet)	3 10 $\frac{7}{8}$	3 4 $\frac{3}{8}$	4 3	3 9 $\frac{1}{8}$
Garden and farm	1 5 $\frac{3}{4}$	1 6	2 4 $\frac{1}{4}$	2 2 $\frac{3}{4}$
Clothing of patients and staff ...	0 11 $\frac{7}{8}$	1 10 $\frac{5}{8}$	1 1 $\frac{1}{2}$	1 0 $\frac{5}{8}$
Salaries and wages (excluding deductions for board, lodging, and washing, and deductions under the Asylums Officers' Superannuation Act, 1909)	9 6 $\frac{7}{8}$	9 7 $\frac{7}{8}$	10 8 $\frac{1}{8}$	10 8 $\frac{3}{8}$
Pensions, gratuities, &c. (charged to maintenance account) ...	0 11 $\frac{1}{8}$	1 0 $\frac{1}{4}$	0 10 $\frac{3}{4}$	0 11 $\frac{7}{8}$
Necessaries (e.g., fuel, light, washing, &c.)	2 2 $\frac{5}{8}$	2 2 $\frac{1}{8}$	2 10 $\frac{7}{8}$	2 10 $\frac{3}{8}$
Surgery and dispensary	0 2 $\frac{5}{8}$	0 2 $\frac{5}{8}$	0 3 $\frac{1}{2}$	0 3 $\frac{1}{2}$
Malt liquor, wine and spirits (not included in ordinary diet) ...	0 0 $\frac{1}{8}$	0 0 $\frac{1}{8}$	0 0 $\frac{1}{8}$	0 0 $\frac{1}{8}$
Furniture and bedding	0 8 $\frac{3}{8}$	0 7 $\frac{1}{8}$	0 10 $\frac{1}{4}$	0 9 $\frac{3}{8}$
Miscellaneous	2 0 $\frac{1}{8}$	1 10 $\frac{3}{4}$	2 3 $\frac{3}{4}$	2 2
	22 0 $\frac{3}{4}$	21 4 $\frac{1}{4}$	25 8 $\frac{1}{8}$	24 10 $\frac{1}{8}$
Less Moneys received for articles, goods, and produce sold (exclusive of those consumed in the institution)	0 8 $\frac{5}{8}$	0 7 $\frac{5}{8}$	1 2 $\frac{3}{8}$	0 11 $\frac{7}{8}$
NET TOTAL average weekly cost per head ...	21 4 $\frac{1}{8}$	20 8 $\frac{5}{8}$	24 5 $\frac{3}{4}$	23 10 $\frac{1}{4}$

The average weekly cost per head for all mental hospitals showed a decrease of 7 $\frac{5}{8}$ d. during the year under review, mainly due to a further fall in the cost of provisions; it will be observed by reference to the table above that the weekly cost per head of this item—as compared with the preceding year—was less by 6 $\frac{1}{2}$ d. in County and by 5 $\frac{3}{8}$ d. in Borough Mental Hospitals.

Pensions.—The average weekly cost per head of pensions granted under the Asylums Officers' Superannuation Act, 1909, was 1s. 2 $\frac{5}{8}$ d. There was also a sum of £18,331 paid direct by County and Borough Councils for pensions, granted under the Lunacy Acts of 1890 and previous years, which do not appear in the accounts of the several Visiting Committees. The inclusion of this sum raised the cost per head of pensions, gratuities, etc., to 1s. 3 $\frac{1}{4}$ d. per week.

9. Causes of Death during 1931.

The time that elapses between the receipt of the mortality statistics for any given year and the preparation for publication of our Report for that year is too short to permit of the compilation of a detailed summary and its adequate study. The subjoined table, therefore, refers to the deaths that occurred in County and Borough Mental Hospitals during 1931, the equivalent details relating to the year covered by this Report (1932) being not yet available. Some reference, however, will be made, in the section that follows this, to the mortality for 1932 in regard to certain diseases, particular reference to which necessitates the production of the latest possible information. This procedure is in accord with that adopted during recent years.

Causes of Death in the cases of all Patients in County and Borough Mental Hospitals who died during the year 1931. The daily average number of patients resident during the year 1931 was 120,051 (Males, 53,377 ; Females, 66,674).

Cause of Death. (The numerals refer to the revised (1929) International List of Causes of Death as adapted by the Registrar-General for use in England and Wales.)		Number of Deaths.		
		Males.	Fem.	Total.
1.	Typhoid Fever... ..	2	11	13
10.	Diphtheria	2	—	2
11.	Influenza	26	87	113
13.	Dysentery	24	29	53
15.	Erysipelas	1	21	22
17.	Encephalitis lethargica	15	14	29
23.	Tuberculosis of the respiratory system	326	290	616
24-32.	Other forms of tuberculosis	37	36	73
48-53.	Cancer and other malignant tumours	144	230	374
59.	Diabetes	12	14	26
62.	Pellagra	—	1	1
82.	Cerebral haemorrhage, apoplexy, etc.	216	251	467
83.	General paralysis of the insane	665	186	851
84.	Other forms of insanity	111	98	209
85.	Epilepsy	181	152	333
87.	Other diseases of the nervous system	43	34	77
91.	Acute endocarditis	11	20	31
92.	Chronic endocarditis, valvular disease	185	295	480
93.	Diseases of the myocardium	478	573	1,051
95.	Other diseases of the heart	46	64	110
97.	Arterio-sclerosis	294	294	588
106.	Bronchitis	82	84	166
107-109.	Pneumonia (all forms)	427	659	1,086
119 & 120.	Diarrhoea and Enteritis	9	16	25
130 & 131.	Nephritis	156	192	348
162.	Old Age	258	365	623
	All other diseases	354	392	746
	Violent deaths (including suicide)	39	33	72
	Total	4,144	4,441	8,585

10. *Infectious and Allied Diseases during 1932.*

The following table shows the incidence of certain infectious diseases among the patients and staffs of County and Borough mental hospitals during the year.

	Patients.			Staff.		
	M.	F.	Total.	M.	F.	Total.
Diphtheria ...	7	20	27	2	14	16
Scarlet Fever ...	11	20	31	—	16	16
Measles ...	34	17	51	—	2	2
Chicken Pox ...	8	13	21	—	—	—
Mumps ...	—	—	—	—	1	1
Variola ...	3	—	3	—	—	—
Cerebro-spinal Fever ...	1	—	1	1	—	1
Whooping Cough	—	3	3	—	1	1
Puerperal : ...	—	—	—	—	—	—
Fever ...	—	5	5	—	—	—
Sepsis ...	—	4	4	—	—	—

The deaths from these infectious diseases were—diphtheria, two children and four women ; scarlet fever, one woman ; measles, eight children, three men and two women ; puerperal sepsis, two women.

The three cases of smallpox occurred at Warwick Mental Hospital. The first man appeared to have been infected during four days' leave at Nuneaton, there being two other cases of the disease in the same house. Both the patient and the male nurse who were attacked by cerebro-spinal fever at Newcastle succumbed to the disease. No other cases occurred.

Tuberculosis.

Incidence.—The number of fresh cases notified during the year was 1,004 (507 men and 497 women). Of these, 895 were pulmonary (461 men and 434 women) : 539 were notified in the first half of the year and 356 in the second half ; a similar seasonal incidence has been observed for some years ; it has been repeatedly found to correspond with the notifications of pulmonary tuberculosis in the general population.

There were 964 pulmonary cases under treatment at the beginning of the year, as well as 217 cases of other forms of the disease. At the end of the year these figures had increased to 1,026 and 227 respectively. Allowing for the fresh cases notified and deaths during the year, we find that, at its close, some 176 patients with the pulmonary and 20 with other forms of the disease had been discharged or were no longer under treatment for tuberculosis. On the 31st December, four male and six female members of the Hospitals staffs were receiving treatment for this disease.

The incidence rate for fresh cases in all forms is 8·3 per 1,000, a higher figure than in 1931, 1930 or 1928.

Two winters, each with a heavy incidence of influenza, account, to some extent, for the recent higher rate of this disease involving the chest.

Year.	Tuberculosis.									
	Daily Average Number of Patients resident.		Incidence. Fresh Cases (all forms).		Deaths.				All forms.	
					Phthisis.		Other forms.			
	No.	Ratio per 1,000 resident.	No.	Ratio per 1,000 resident.	No.	Ratio per 1,000 resident.	No.	Ratio per 1,000 resident.		
1923*	...	102,076	12·6	870	8·5	193	1·9	1,063	10·4	
1924*	...	104,137	11·7	941	9·0	223	2·1	1,164	11·2	
1925*	...	106,403	11·8	773	7·3	145	1·4	918	8·6	
1926*	...	109,113	9·7	715	6·6	160	1·5	875	8·0	
1927	...	111,363	9·1	653	5·9	86	0·8	739	6·6	
1928	...	113,987	8·0	617	5·4	88	0·8	705	6·2	
1929	...	115,875	8·5	725	6·3	78	0·7	803	6·9	
1930	...	118,039	8·0	667	5·7	72	0·6	739	6·3	
1931	...	120,051	7·7	616	5·1	73	0·6	689	5·7	
1932	...	121,261	8·3	657	5·4	79	0·7	736	6·1	

* Cases where Tuberculosis was returned as a secondary cause of death included in the deaths for these years.

No fresh cases were reported from Exeter, Croydon or Scalebor Park Hospitals, or from Swansea, which was opened during the autumn. One case was reported from the East Riding, and only two from each of five hospitals: Berks, Ipswich, Newcastle, Norwich and York (City).

The geographical incidence mentioned in the Report for 1931 relating to hospitals north and south of the Wash, occurs again in 1932; in the northern group of 32 hospitals the rate is 9.4 per 1,000, while in the southern group it is 7.6 per 1,000.

Another feature is the higher rate in the hospitals admitting patients from seaports. Middlesbrough has shown high rates of incidence and death throughout the last decade, except for 1923 and 1925; Durham has been much above the average throughout these years. Portsmouth and Sunderland showed higher than average rates for five out of the ten years, and Knowle (for Southampton, etc.) for six years. At the Hull Hospital the death rate was above the average for eight of the ten years. Cardiff incidence rates have been higher than the average except for 1925 and 1928 and the death rates except for 1931. Bristol incidence has also been above the average except for 1929, and the death rates except for 1928. Chester, receiving patients from Birkenhead, has shown a high incidence rate throughout the decade, though the death rate has been below the average in four of these years; the notified cases here in this period have numbered 263, while the deaths have reached only 125, a ratio which may be associated with the good provision for open-air treatment. Rainhill, receiving a considerable proportion of the Liverpool patients, has also shown rates well above the average throughout the decade.

It is significant that while the total deaths from this disease in all the hospitals during these ten years have been higher among the women than the men by 119, the deaths in the 14 hospitals mainly associated with seaports have been 874 male and 657 female. Other hospitals showing high rates during the greater part of this period are Cumberland, Northumberland, Menston, Stafford, Cheddleton, Notts County, Derby County, Bucks, Bedfordshire, Oxon, and Wilts.

In contrast are certain hospitals with low figures for this decade. The following have had a lower tuberculosis death rate throughout than the average for all mental hospitals:—

Whittingham	Banstead
Rubery Hill	Parkside
Exeter	West Sussex
City of London	

Scalebor Park, a county hospital where there are only private patients (220), has had only four tuberculosis deaths in ten years.

The death rate has exceeded the average in one year only in the following list, and for the other years has been lower:—Severalls, East Sussex, Wakefield, Croydon, Ipswich, Kesteven, Park Prewett.

Other hospitals with a generally low tuberculosis death rate for these years are Cambridge, Barnsley Hall, Barming Heath, Winson Green, East Riding, Isle of Wight.

The number of *deaths* during the year is seen in this table.

				Males.	Females.	Total.
Pulmonary form	...	...	...	354	303	657
Other forms	...	...	...	36	43	79
All forms	...	...	...	390	346	736

The total, 736, yields a death rate of 6.1 per 1,000 patients living in the hospitals. The disease accounts for 8 per cent. of all deaths.

During the first half of this decade the total deaths from tuberculosis among women exceeded those among men, but during the latter half the sex predominance has been reversed and the disease now accounts for 9.1 per cent. of the male and 7.1 per cent. of the female deaths.

No deaths were reported during the year from Berkshire, Isle of Wight, Scalebor Park, Croydon, Norwich, or the recently opened hospital at Swansea.

It would appear that for the early detection of pulmonary tuberculosis, particularly among the mentally disordered, the aid of x-ray examination is now a necessity, and where sputum is not expectorated, as so often happens among these patients, the usual sputum examination has to be replaced by that of faeces.

Means for the effective segregation of a small number of active tuberculous cases is still lacking in many hospitals. We believe that it would be of service in the reduction of this infection to chart the wards in which affected patients have lived prior to the appearance of the disease. It is well known, however, to the medical staffs of hospitals that not a few of the tuberculous patients are already affected at the time of admission; during 1932 some 40 patients died of tuberculosis within a month of their admission to hospital.

The Enteric Group.

There were 99 cases of typhoid and paratyphoid fevers during the year in 41 hospitals. Sixteen of the 99 were male and 83 female patients. In 32 of the 41 hospitals the disease was confined to the women's section. Ten women nurses have been affected, of whom one died. During the last ten years, in a total of 1,256 cases, 78.1 per cent. have been women, and the case mortality has been: for men, 30.9 per cent., for women, 23.2 per cent.

Year.	Enteric Fever.										
	Patients.						Staff.				
	Incidence.			Deaths.			Incidence.		Deaths.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.		
1923...	18	87	105	2	14	16	1	16	17	—	1
1924...	23	101	124	5	22	27	2	12	14	—	—
1925...	29	99	128	8	24	32	2	17	19	—	3
1926...	31	77	108	10	20	30	1	10	11	—	2
1927...	37	100	137	9	19	28	1	6	7	—	1
1928...	50	169	219	25	50	75	5	12	17	—	2
1929...	16	104	120	6	26	32	—	14	14	—	2
1930...	34	72	106	9	19	28	—	—	—	—	—
1931...	21	89	110	6	14	20	—	—	—	—	—
1932...	16	83	99	5	20	25	—	10	10	—	1

From time to time for many years, attention has been drawn to this reversal of the sex distribution of the incidence of the enteric fevers in mental hospitals compared with the general population. The investigation of the minor outbreaks, where infection has not been on a water-borne scale, throws some suspicion on the spread of the disease by carriers, or early sick, being followed at water closets by other patients both in wards and gardens. We have little doubt that one of the most profitable uses of disinfectants in a mental hospital is in their application to the woodwork and fittings of the closets and to anything which the patient is likely to touch on first leaving stool. In the wards of the more degraded patients, where these infections mostly occur, it would assist in the detection of dirt if the woodwork of the closets were painted white and patients required to wash after using them.

It is noteworthy that, during 1932, in 20 hospitals the occurrence of typhoid was limited to one case, and in ten other hospitals to two cases.

At Claybury 15 cases occurred during the year ; from January to March four cases arose in one male ward, and in March and April two cases in another ward using the same garden with its w.c. A typhoid carrier was discovered in the first ward. On the women's side there were eight cases in one ward in March and April ; one carrier was discovered in April. In another female ward a woman became ill who slept next to another patient who had formerly suffered from typhoid but was not regarded as a carrier. Some nine carriers are now known here. A bacterial examination of laundry machinery that frequently contains boiling water yielded cultures of prolific growths of *b. alkaligenes*, staphylococci, and a few gram positive bacilli. This result may be

unexpected to many, but it confirms the suspicions we have held for some time that, unless laundry cleansing and disinfection processes are tested, there may be a serious leakage of infected material back to the wards.

Nine cases of typhoid occurred among the women at the Nottingham County Mental Hospital during five weeks in July and August; eight patients belonged to one ward and another to the laundry.

Eight cases occurred in women's wards at Northampton in February, June, August, September and December. Outbreaks of infection in 1927 and 1924, as well as in earlier years, have left many carriers among the survivors. A considerable amount of bacteriological investigation has been carried out here to determine which of these survivors are still a source of danger and the investigation still continues on a considerable scale. The question of the water supply in relation to the drainage system is receiving the attention of the visiting committee.

During the year ten members (all female) of the staffs of mental hospitals were attacked by typhoid and one died.

The disease terminated fatally in the cases of five male and 20 female patients, yielding a mortality rate of 25·3 per cent. of the attacked.

At one hospital two cases of paratyphoid occurred in quick succession. It was subsequently learned that a new patient in the ward had been ill shortly before admission; paratyphoid B. bacilli were found in her stools seven weeks later.

As some value has been attached to the operation of cholecystectomy in the elimination of the carrier state, it is of interest to record the observation that a patient who underwent this treatment in October, 1927, and received a course of autogenous vaccines, continues to void typhoid bacilli in the stools.

Dysentery.

While the number of fresh cases and the incidence rate have both increased on the figures for the previous ten years, the death rate remains the same as for 1931, 0·4 per 1,000.

The table below shows the comparison of the figures since 1922.

Year.	Dysentery.			Severe Diarrhoea.
	Fresh cases.	Incidence rate per 1,000.	Death rate per 1,000.	Fresh cases.
1922	858	8·7	1·6	386
1923	458	4·5	0·9	248
1924	362	3·5	0·9	223
1925	253	2·4	0·6	277
1926	515	4·7	0·9	276
1927	307	2·8	0·4	184
1928	403	3·5	0·6	201
1929	372	3·2	0·3	193
1930	254	2·2	0·2	189
1931	423	3·5	0·4	269
1932	563	4·6	0·4	220

In 21 of the 40 hospitals in which cases of dysentery occurred, it gave rise to no deaths. In each of 20 hospitals there were fewer than six cases.

The largest incidence is shown in the table below :—

			Incidence.		Deaths.	
			M.	F.	M.	F.
Brentwood	...	...	71	8	—	2
Cheddleton	...	...	25	35	2	3
Hanwell	...	...	33	14	2	1
Wadsley	...	...	21	25	3	2
Leicester City	...	...	11	25	—	—
Monmouth	...	...	16	20	2	1
Denbigh	...	...	11	24	1	4

At Brentwood, outbreaks occurred in the men's section in the spring, shortly after midsummer, and again in the autumn. Ten different wards were involved, but more than 50 per cent. of these cases arose in wards 4 and 2. During the extensive laboratory investigations which were carried out during the year, some five male and two female carriers of this infection were discovered. It is considered that the overcrowded state of the hospital contributed to the dimensions of the outbreaks.

The outbreak at Cheddleton occurred during the early months of the year. Three male and four female carriers of this infection were discovered and use was made of an autogenous vaccine in the treatment of the affected patients. Two male wards using the same garden were involved and five female wards, in one of which former dysenteric patients were accommodated. The overcrowded dormitories are considered to have facilitated the spread of infection from the early cases of a very mild clinical type.

A few cases occurred at Hanwell in the first quarter in male wards, mainly in No. 8, the w.c. of which had been used by patients attending the Entertainment Hall. A further group of

cases arose in the autumn in some of the same wards, and a few in female wards. On both sides fresh cases occurred in wards where dysentery patients were being or had been nursed, and two male nurses were infected, the only instances during the year.

In one hospital where several cases had arisen in several different wards, suspicion fell on the efficacy of the disinfecting tanks dealing with fouled woollen garments; a test was carried out on a piece of material which had been soaking in a disinfectant for four hours: it yielded a profuse growth of bacillus coli, but no growth was obtained after the material had been soaking 18 hours.

The condition classified as "severe diarrhoea," because it does not present the clinical or bacterial evidence of dysentery, has affected 118 men and 102 women, a total of 220, of whom five men and eleven women died. Twenty-six cases occurred at Whittingham and Derby County Mental Hospitals, 24 at Hanwell, 19 at Bexley, 18 at Carmarthen, and 14 at Glamorgan.

It is of interest to record that, in one hospital (Dorset) where a patient had been bedridden for five months since admission before the onset of an attack of dysentery, another patient, E. H., had been transferred to her ward six weeks prior to the onset, and that though E. H. had suffered from dysentery in 1929, 17 separate examinations of her stools for bac. dys. from February to October, 1930, had all yielded negative results.

The severity of dysentery, as estimated by the case mortality, has diminished from 20·7 per cent. in 1923 to 8·1 per cent. in 1932, but the latter rate is resolved into 6·9 per cent. for men and 9·6 per cent. for women, to whom the disease is more fatal than to men: the reverse of the mortality of typhoid in the mental hospitals affecting the two sexes.

Erysipelas.

Has attacked 81 men and 187 women, a total of 268, the highest number since 1923. Six men and 16 women died. It arose in 64 hospitals, 21 being at East Sussex, 18 at Claybury, 12 at Croydon, 11 at West Sussex, and 10 each at Denbigh, Norfolk and Burntwood.

Influenza.

The *notifications* of this infection reached the high figure of 3,717, including 43 cases of influenzal pneumonia. The deaths reported under this heading were 43 men and 108 women, a total of 151.

Pneumonia, etc.

Non-tuberculous inflammatory diseases of the lungs and bronchi resulted in the deaths of 566 men and 924 women, a total of 1,490, of whom 886 were over the age of 55.

This group constitutes 16·3 per cent. of the deaths from all causes.

REGISTERED HOSPITALS.

(Thirteen in Number.)

These hospitals continue to be well administered and to afford to private patients of all classes skilled medical treatment with kind and efficient nursing care in suitable and well ordered surroundings. A list of them will be found in Appendix B in Part II.

Patients resident on 1st January, 1933.

Status.	Males.	Females.	Total.
Voluntary	211	266	477
Temporary	13	30	43
Certified	746	1,180	1,926
Total	970	1,476	2,446

A year previously the patients in these hospitals numbered 2,437 (males 967, females 1,470), so that during the year they increased by 9 (males 3, females 6).

Direct admissions numbered 960 (males 408, females 552). Of the total number 65 per cent. were voluntary patients, 7 per cent. were temporary and 28 per cent. were certified.

Departures and Discharges.—The percentage of total discharges (recovered, relieved and not improved) to the admissions during 1932 was 75·2 and of recoveries alone 41·7 (males 42·2, females 41·3). The percentage distribution of the discharges and departures was—certified, 20·8; temporary, 2·9; voluntary, 76·3.

Deaths in these hospitals numbered 210, and the death rate to the daily average number of all patients resident was 8·7 (males 9·4, females 8·2).

Use of Voluntary and Temporary Treatment.—Of 960 patients admitted to these hospitals, 65 per cent. were received as voluntary patients. The percentages ranged from 29 to 76; at only three places was the proportion of voluntary admissions below 50 per cent. and the hospitals with the three highest percentages were The Retreat (70), Cheadle Royal (75) and Bethlem Royal (76).

With respect to temporary treatment, 7 per cent. of the admissions were received as temporary patients; there were three hospitals, at each of which the total admissions numbered between 30 and 40, where no temporary patient was admitted; the hospitals with the three highest percentages of admissions as temporary patients were St. Andrew's, where 11 per cent. of 122 admissions were received on that footing, The Warneford, with 12 per cent. of 40, and Wonford House, 26 per cent. of 27.

NAVAL AND MILITARY HOSPITALS.

Royal Naval Hospital, Great Yarmouth.—This hospital was visited by two Commissioners on 22nd October, 1932. The number of patients on the books was 222, all of whom were in residence with the exception of one who was absent on leave. This number shows an increase of 7 since the date of the previous visit.

The general health has been extremely good and the mortality rate for 1931 was only 3·42 per cent. of the average number of patients resident.

The patients who are capable of work are engaged in some form of occupation, 70 are allowed out on parole, their amusements are well provided for, all that can be is done to promote their welfare, and the dietary is a generous one.

The hospital was throughout well kept, the patients were without complaint and appeared to be in receipt of kindly care and attention.

Royal Military Hospital, Netley.—The Commissioners who visited D Block of this hospital on 22nd July, 1932, were satisfied that it continues to be conducted in a highly efficient manner and that full provision is made for the security, treatment and welfare of the patients.

Since the commencement of the year 129 patients had been under treatment, 80 of whom were new admissions. The number residing in the Block at the date of the visit was 12, a like number had been returned to duty, and the remainder had been discharged to their homes, to the care of friends or to their appropriate areas or mental hospitals.

STATE CRIMINAL ASYLUM, BROADMOOR.

The Commissioners who visited this institution on 24th November, 1932, found the wards in good order and the patients well cared for in comfortable surroundings. The diet appeared to be ample and the general health of the inmates was very good.

The number of patients resident was 835—males 623, females 212.

LICENSED HOUSES.

(Fifty-four in number.)

On the 1st January, 1933, there were 19 Metropolitan Houses licensed by us and 35 Provincial Houses licensed by Justices for the reception of patients under the Lunacy and Mental Treatment Acts, the same number as a year previously.

Patients resident on 1st January, 1933.

				Males.	Females.	Total.
Metropolitan Houses :						
Voluntary	...	...	...	61	92	153
Temporary	...	...	...	2	12	14
Certified	...	...	...	337	650	987
Provincial Houses :						
Voluntary	...	...	...	92	154	246
Temporary	...	...	...	1	8	9
Certified	...	...	...	641	898	1,539
Total	...	...	...	1,134	1,814	2,948

The total number of patients resident in these houses showed a decrease of 36 (24 males and 12 females) during the year.

Direct admissions numbered 1,200 (males 426, females 774). Of the total number, 53 per cent. were voluntary patients, 6 per cent. were temporary and 41 per cent. were certified.

The percentage of total *departures and discharges* (recovered, relieved and not improved) to the admissions was 69·7, and of recoveries alone 28·8 (males 31·9, females 27·1). The percentage distribution of the discharges and departures was—certified, 34·4; temporary, 4·7; voluntary, 60·9.

The *deaths* numbered 310, and the death rate per cent. of the daily average of all patients resident was 10·5 (males 9·4, females 11·2).

Use of Voluntary and Temporary Treatment.—During the year 1932, 53 per cent. of the 1,200 patients admitted to these institutions were voluntary. The procedure appears to be practised rather more extensively in the provincial than in the metropolitan group of these houses—the percentage of voluntary cases admitted to the former during the year under review being 60 (it was 53 in the previous year) as compared with 46 in the latter which is the same proportion as in the previous year. Apart from five of these establishments to which no admission took place, there was only one to which no voluntary patient was admitted.

Temporary treatment without certification cannot be practised in Licensed Houses without the previous approval of the establishment for this purpose by the Board. Not all of them have applied for approval. Subject in some cases to certain limitations, 17 metropolitan and 27 provincial houses are approved for this purpose. Of the direct admissions to these institutions, 7 per cent. were temporary patients in the metropolitan and 6 per cent. in the provincial houses.

Malling Place.—We are pleased to note that during the year provision of means for open-air treatment in bed has been made by the erection of two verandahs. These will form a valuable

addition to the facilities for treatment already in existence at this house.

Variations in Licences.—The changes that have taken place in the licences are included in the revised list of these houses which, with their present licensees, may be found in Appendix B. in Part II.

Our inspection of these houses during the past year enables us to say that they are so administered as to afford due care and supervision of those in residence.

SINGLE-CARE.

The following table shows the number of patients who were resident in private single-care under the provisions of the Lunacy and Mental Treatment Acts, but exclusive of cases found of unsound mind by inquisition.

Patients resident on 1st January, 1933.

Status.	Males.	Females.	Total.
Voluntary	2	2	4
Temporary	—	—	—
Certified	85	249	334
Total	87	251	338

The above figures are very similar to those of a year ago, and we are able to report, as a result of our visits to these patients—to some of whom a second visit has been paid—that the arrangements for their care and treatment were generally satisfactory.

CERTIFIED PATIENTS IN PUBLIC ASSISTANCE INSTITUTIONS AND PUBLIC HEALTH HOSPITALS.*

The number of patients certified under the Lunacy Acts and detained in Public Assistance Institutions and Public Health Hospitals on 1st January, 1933, was 14,960 (males 6,533, females 8,427).

It should be noted that these figures relate only to persons certified under the Lunacy Acts, and that they by no means represent the total number of mental cases in these institutions.

Notwithstanding the need for further accommodation in County and Borough Mental Hospitals, no additional Visiting Committee has availed itself of the facilities afforded by Section 26 of the Lunacy Act, 1890, for providing accommodation in Public

* The number of mental defectives in these institutions will be found on p. 82.

Assistance Institutions for selected patients. The Committee of the Berkshire Mental Hospital, however, have extended their agreement for the reception of patients in the Hungerford Public Assistance Institution to include 20 additional females.

On the other hand, the agreement—approved in 1926—for the reception of 23 male patients from East Sussex Mental Hospital in the Steyning Public Assistance Institution was terminated during the year, on the grounds of economy.

SOCIAL WORK AND AFTER-CARE.

In spite of the financial depression, some form of social service is being established in an increasing number of psychiatric out-patient centres and in mental hospitals.

The organization of a one-year post-graduate course in Mental Health by the London School of Economics is doing much to raise the standard of psychiatric social work, as well as to introduce amongst social workers in neighbouring fields a better recognition of the possibilities of treatment in mental illness.

Students for the course are selected because of personal suitability and of previous experience in social work. The course includes lectures in subjects relating to mental hygiene, practical work at The Maudsley Hospital, and home visiting, all under the guidance of experienced psychiatrists and specially qualified social workers. The purpose of the course, as stated in a circular letter issued by the Child Guidance Council is "to equip social workers with sufficient knowledge and practical skill to enable them to work with the psychiatrist and assist him by obtaining histories of their patients and their families and by carrying out any necessary re-adjustments in the home of the patients."

Through the generosity of the Commonwealth Fund, the Child Guidance Council are able to place the services of a limited number of trained social workers at the disposal of clinics and hospitals for a demonstration period, after which it is hoped that the authority responsible will take over and establish the service.

The numerous advantages to the clinic or hospital of the acquisition on the staff of a whole-time fully qualified worker have, we think, been amply demonstrated. We know of no psychiatrist who, after having experienced the benefits of the service, would be without it.

A few such qualified psychiatric social workers are now employed in out-patient centres attached to general and to municipal hospitals, and in observation wards, whilst two are working in London County Council mental hospitals for a demonstration period.

A part-time social service is provided in some mental hospitals and out-patient centres by arrangement with the local voluntary association for mental welfare or by officers of the Mental Deficiency Committee. A few mental hospitals have appointed

nurses or others as part-time social workers on their staff and valuable after-care work continues to be carried out by the Mental After-Care Association and by the Brighton Guardianship Association.

Whole-time appointments of trained workers are, therefore, still the exceptions. The movement is a recent one, and has come at a time when expansion is difficult; but we believe that this service will come to be looked upon as an essential aid to the psychiatrist in carrying out constructive social work in the patient's home and in facilitating the boarding-out of suitable patients from mental hospitals.

II. MENTAL DEFICIENCY.

1. ASCERTAINMENT.

The need for beds in Institutions has loomed so large on the horizons of the Board, of Local Authorities, and of others concerned with the welfare of the mentally defective, that there may be a danger of overlooking the still more fundamental need for ascertainment. We wish, therefore, this year to place ascertainment in its logical position at the beginning of the section of our Report dealing with mental deficiency, and to discuss the social and economic results of inactivity in this preliminary duty under the Act.

Ascertainment is an ambiguous word and it may be well to begin by defining what, in the Board's view, the process involves. Under the Mental Deficiency Acts, Local Authorities have a duty "to ascertain what persons within their area are defectives subject to be dealt with." This duty involves two processes; the Local Authority first satisfies itself that a person is mentally defective within the meaning of the Act, before going on to consider whether or not he is subject to be dealt with. The latter process is not one that can be carried out once and for all. A defective living under good conditions may at any time become subject to neglect, ill-treatment, etc., and in order that such a case may at once receive the care and protection afforded by the Act the Local Authority provides some means of keeping in touch with all defectives in the area as part of the machinery of ascertainment.

There is a feeling amongst some Local Authorities that, in the present need for economy, ascertainment is a duty that may properly be postponed. They point out that there is often difficulty in finding beds in institutions, even for the obvious cases that thrust themselves into view and that it is a waste of time and energy to take active steps to enquire into the whereabouts and circumstances of the rest.

It can, we think, be shown that this policy is both short-sighted and uneconomical.

All Local Authorities will agree that the selection of cases for the inadequate number of beds in institutions is at the present moment of special importance. Beds should be reserved strictly for those who can receive in no other way the protection, training and care they need. For the remainder, who unfortunately still include many who for various reasons would be better off in an institution, much is being done by the more active authorities by such comparatively uncostly methods as licence, guardianship, supervision and by the provision of day training centres. Without thorough ascertainment it is not possible to make a wise use of institution beds or to provide the form of preventive care in the community appropriate to each case.

In the ten years, 1923 to 1933, the number of defectives reported to Local Authorities in England and Wales has increased from 28,495 to 102,345.

The distribution of defectives dealt with at these periods was as follows :—

	1st January, 1923.	1st January, 1933.
In Institutions provided under		
Mental Deficiency Act ...	15,327	33,359
Under Guardianship or Notified	459	2,799
Under Statutory Supervision ...	10,707	29,735

It is inevitable that the cost borne by the Mental Deficiency service should have risen with the numbers dealt with. This expense, however, is not a new public liability but rather the transference of existing expenditure to a new preventive social service. The burden of maintaining this dependent class of persons has always fallen upon the ratepayer. But before the passing of the Mental Deficiency Act 1913, and now where the provisions of the Acts are not made use of, mental defectives drift into Mental Hospitals, Prisons, Public Assistance Institutions, Rescue Homes, etc. Not only are they a heavy financial burden on the public, but they return at intervals to the community to suffer and to cause suffering.

In one way or another, therefore, the community must contribute to the support of this defective class, and we believe that the transference of the expenditure to the mental deficiency service is in itself an economy. Unrecognized defectives are still costing the country large sums spent in treating the symptoms whilst ignoring the disease. Early recognition and treatment of the primary condition is the only way of preventing present waste and future liabilities. Though mental defectives are seldom actively vicious, their inclination to sink into and inability to struggle out of bad surroundings make them gravitate to the bottom of the social scale. Where their surroundings are immoral and corrupt they become themselves a source of corruption and of moral, social and economic danger to the State.

The principal provision for securing early ascertainment is through Section 2(2) (a) and 2(2) (b) of the Mental Deficiency Act 1913.

It is disturbing, therefore, to find that, in spite of the provision of the 1927 Act which enabled Local Education Authorities to notify for supervision as well as for guardianship and institutional care, no increase has taken place this year in the number of children notified to Local Authorities by Local Education Authorities under this Section as ineducable and on leaving Special Schools. On the face of it, the proportion of cases notified in this way to the total number of cases reported

to Local Authorities shown in the following table appears to be fairly satisfactory and to be increasing :—

Year.	Notified by Local Education Authorities.	Approximate estimate of fresh cases reported to Local Authorities.	Percentage.
1926	2,353	4,754	49·5
1929	3,274	4,981	65·7
1932	3,777	5,035	75·0

These figures show that in 1932 75 per cent. of the fresh cases reported came through Local Education Authorities, whilst the remaining 25 per cent. were dealt with as adults. But it must be remembered that the total number of defectives known to Local Authorities is still very little more than half the number estimated to exist, and that the yearly number reported is also still far from complete. If these unascertained defectives are also taken into account therefore the figure of 25 per cent. given above under-represents the proportion who are still only recognized and dealt with in adult life.

Judging from the history of many who come to our notice, action is often taken only after repeated failure, and it is clear that the expectation that the Mental Deficiency Act would be a measure of protection and prevention is being only partially fulfilled. There is every probability too that the notified cases are those who are excluded from school as ineducable, whilst the higher grade children continue to be deprived of the training and subsequent notification and care that may enable them to live useful and harmless lives in the community.

The following statement made in the annual report of the Royal Western Counties Institution emphasizes this aspect of the question.

“ The Committee view with alarm the diminishing number of children able to gain admission to the Institution under the present conditions of restricted accommodation. There is a great advantage in training the mentally defective when young, while there is still every opportunity to mould character and personality in the right direction and to develop limited capacities to the utmost, yet it is a sorry fact that to-day the children in residence form only 20 per cent. of the total number, compared with 60 per cent. five years ago. Whenever a vacancy occurs there is an appeal to admit an adult who has caused some social harm or is in moral danger, and in the immediate interests of the community the case must be received. But this enforced policy results in the neglect of the children and for such neglect the price must sooner or later be paid. In dealing with the problem of mental deficiency, there must be adequate facilities for the care and training of children. Seventy-five per cent. of the patients on licence from the Institution on 31st March received training in childhood. They are maintaining themselves. Had they been deprived of that early training and come to the Institution during adolescence, possibly in consequence of some serious delinquency, they would probably have been a charge to the community for many years, and perhaps for life.”

As we pointed out last year, Local Education Authorities have only the power under Section 2(2) (b) to notify children who leave Special Schools. Only 15 per cent. of the estimated number of feeble-minded children in England and Wales are at present attending Special Schools, and until the law is amended so as to allow the notification of feeble-minded children leaving any school at any age this serious defect in the whole machinery of the Act cannot, we think, be entirely overcome. Even in the present state of the law, however, improvement could be effected by greater activity and closer co-ordination between Local Education Authorities and the Mental Deficiency Committees.

The number of cases notified by Local Education Authorities in 1932 was 3,777, three less than the total of 3,780 in 1931. The increase of notifications during the years 1931 and 1930 was 112 and 394 respectively.

The returns show also that no case has been so notified to Local Authorities in the following areas in the year 1932 :—

Huntingdon C.	Flint C.
Great Yarmouth C.B.	Merioneth C.
Rutland C.	Merthyr Tydfil C.B.
Dudley C.B.	

The following authorities have had only five, or less than five, cases notified to them by Local Education Authorities during the past year :—

Cambridge C.	Bath C.B.
Isle of Ely C.	Isle of Wight C.
Chester C.B.	Burton-on-Trent C.B.
Wallasey C.B.	Eastbourne C.B.
Exeter C.B.	Hastings C.B.
Darlington C.B.	Worcester C.B.
Gateshead C.B.	Yorks, East Riding C.
West Hartlepool C.B.	Rotherham C.B.
Canterbury C.B.	Anglesey C.
Leicester C.B.	Brecknock C.
Lincoln C.B.	Cardigan C.
Newport C.B.	Caernarvon C.
Soke of Peterborough C.	Pembroke C.
Oxford C.	Radnor C.

Of the 3,777 cases notified last year by Local Education Authorities, 417 have been placed in Institutions, 27 under guardianship, and 2,591 under Statutory supervision. No action has been taken in 673 cases. It is difficult to understand why Local Authorities should fail to take prompt action in so large a proportion as 17·8 per cent. of the whole number. Even in cases where institutional care is desirable much can be done for the defective by supervision or guardianship pending the provision of accommodation.

The annual returns furnished by Local Authorities this year show that on 1st January, 1933, the number of mental defectives reported to them, whether subject to be dealt with or not, was 102,345* an increase of 5,035 during the year. The ratio discovered per 1,000 of the population of England and Wales is now 2·56, as compared with a ratio of 2·44 a year ago. The following table from the Wood Committee's Report (Table 11 (b) (3)) shows a probable average all over the country of 4·52 per 1,000, excluding feeble-minded children of school age. (It should be noted that Local Authorities have been requested not to include in their returns mentally defective children between the ages of 7 and 16 unless they have been notified by Local Education Authorities under Section 2(2), so these figures should be comparable) :—

<i>Per 1,000 of population.</i>				
Adults	...	...	...	3·79
Children—				
Imbeciles	...	...	...	0·60
Idiots	...	...	...	0·13
				—
Total	...	...	...	4·52
				—

The discrepancy between these figures, 2·56 and 4·52 per 1,000, shows that ascertainment all over the country is still far from complete.

The returns show also that 915 of the cases reported last year were in receipt of poor relief and were dealt with under the provisions of the Local Government Act, 1929, which extended to cases in receipt of poor relief the duty of the Local Authority to ascertain all cases in their area. Of these, 582 were receiving indoor, and 333 outdoor, relief. On 1st January, 1933, the total numbers "subject to be dealt with" and in receipt of poor relief were 11,289 (indoor relief, 7,301; outdoor relief 3,988).

The following table shows the proportion, per 1,000 of the population of the area, of cases reported to Local Authorities and of those receiving institutional care. It will be seen that although seven now exceed the estimate of the Wood Committee there are still 14 who have knowledge of less than 1·50 per 1,000.

	<i>Reported.</i>	<i>In Institutions.</i>
Cardigan C.	7·09	0·15
Devon C.	6·34	1·00
Walsall C.B.	5·21	1·45
Suffolk E. and W.	4·94	0·62
Cumberland, Westmorland and Carlisle C.B.	4·84	0·65

* This is the total number of cases known to Local Authorities, and is not comparable with the numbers given on p. 75.

	<i>Reported.</i>	<i>In Institutions.</i>
Rutland C.	4·73	1·17
Reading C.B.	4·56	0·62
Somerset C.	4·42	1·45
Nottingham C.B.	4·32	0·72
Ipswich C.B.	4·28	1·52
Shropshire C.	4·22	0·56
Cambridge C.	4·14	0·81
Berkshire C.	4·12	0·74
Radnor C.	3·84	0·43
Bristol C.B.	3·77	1·08
Wiltshire C.	3·67	1·12
London C.	3·63	1·18
Darlington C.B.	3·60	0·48
Merioneth C.	3·59	0·54
Hertford C.	3·57	0·42
Burton-on-Trent C.B.	3·56	0·36
Oxford C.	3·54	0·23
Birmingham C.B.	3·52	1·57
Anglesey C.	3·47	0·39
Cornwall C.	3·33	0·46
Oxford C.B.	3·30	0·97
Plymouth C.B.	3·28	1·07
Leeds C.B.	3·25	0·95
Smethwick C.B.	3·21	0·85
Leicester C.	3·18	0·44
Essex C.	3·15	0·43
York C.B.	3·08	1·20
Isle of Wight C.	3·06	0·53
Southampton C.B.	3·02	0·42
Newport C.B.	2·97	0·22
Birkenhead C.B.	2·95	0·33
Hereford C.	2·92	0·37
Bath C.B.	2·92	1·04
Southampton C.	2·86	0·65
East Sussex C.	2·83	0·47
Pembroke C.	2·82	0·51
Portsmouth C.B.	2·81	0·59
Brecknock C.	2·78	0·24
Parts of Lindsey C.	2·71	0·41
Rotherham C.B.	2·69	0·54
Dorset C.	2·65	0·90
Bradford C.B.	2·62	0·61
Northampton C.B.	2·61	0·23
Gloucester C. and Gloucester C.B.	2·60	0·53
Stafford C.	2·59	0·33
Kingston-upon-Hull C.B.	2·57	0·66
Exeter C.B.	2·55	1·04
Leicester C.B.	2·55	1·04
Sheffield C.B.	2·55	0·77
Lincoln C.B.	2·51	0·48
Derby C.B.	2·50	0·33
Worcester C.B.	2·42	0·57
Warwick C.	2·41	0·80
Soke of Peterborough C.	2·40	0·77
Canterbury C.B.	2·37	0·74
Monmouth C.	2·35	0·39
Wolverhampton C.B.	2·35	0·63
Cardiff C.B.	2·35	0·74
Dudley C.B.	2·33	0·45

	<i>Reported.</i>	<i>In Institutions.</i>
Parts of Holland C.	2.33	0.21
Middlesbrough C.B.	2.32	0.50
East Ham C.B.	2.29	0.64
Caernarvon C.	2.26	0.37
Sunderland C.B.	2.24	0.42
Buckingham C.	2.23	0.97
Worcester C.	2.22	0.48
West Ham C.B.	2.19	0.67
Southend-on-Sea C.B.	2.13	0.48
York, East Riding C.	2.11	0.68
Northampton C.	2.09	0.33
Glamorgan C.	2.09	0.38
West Bromwich C.B.	2.08	1.18
Barnsley C.B.	2.06	0.32
Tynemouth C.B.	2.05	0.88
Swansea C.B.	2.05	0.18
Montgomery C.	2.00	0.79
Hastings C.B.	1.99	0.55
Coventry C.B.	1.99	0.26
Chester C.B.	1.98	0.72
Norfolk C.	1.98	0.68
Lancashire Mental Hospitals Board ...	1.96	0.59
Derby C.	1.95	0.30
Kent C.	1.93	0.58
Great Yarmouth C.B.	1.92	0.55
Durham C.	1.89	0.33
Denbigh C.	1.89	0.56
Newcastle-on-Tyne C.B.	1.88	1.13
Eastbourne C.B.	1.88	0.72
Grimsby C.B.	1.87	0.37
Yorks, North Riding C.	1.87	0.41
Flint C.	1.82	0.29
Norwich C.B.	1.80	0.73
Northumberland C.	1.76	0.52
Croydon C.B.	1.73	0.51
Middlesex C.	1.64	0.74
Halifax C.B.	1.61	0.88
Isle of Ely C.	1.59	0.31
Carmarthen C.	1.59	0.27
Yorks, West Riding C.	1.56	0.47
Gateshead C.B.	1.55	0.58
Dewsbury C.B....	1.54	0.46
Surrey C.	1.53	0.51
Chester C.	1.50	0.22
Doncaster C.B....	1.50	0.66
Nottingham C.	1.42	0.25
Brighton C.B.	1.42	0.14
Bedford C.	1.38	0.46
Wakefield C.B.	1.38	0.35
West Sussex C.	1.33	0.42
Merthyr Tydfil C.B.	1.29	0.20
Wallasey C.B.	1.14	0.52
Stoke-on-Trent C.B.	1.04	0.47
Huddersfield C.B.	1.04	0.38
West Hartlepool C.B.	1.00	0.35
Parts of Kesteven C.	0.98	0.17
Bournemouth C.B.	0.95	0.32
South Shields C.B.	0.81	0.36
Huntingdon C.	0.20	0.20

2. ACCOMMODATION.

During the year, 2,146 new beds have been provided by Local Authorities in Institutions under Section 36 of the Mental Deficiency Act. Institutional provision has been delayed by financial stringency. Plans have been curtailed and building programmes for the completion of colonies are being slowed down so that the cost may be spread over a prolonged period. The rate of increase is therefore far from overtaking the urgent need for beds. In this year's returns there are still 3,480 cases reported as awaiting removal to an institution, and in many areas there must be others, unrecognized as defective, who are in equal need.

It appears to us all the more important in the present difficult times that Local Authorities should take a long-sighted view of their probable future requirements. The pressing need for beds must necessarily loom large in the eyes of Local Authorities anxious to fulfil their duties under Section 30 (c) of the Act, but unless their immediate expedients are consistent with the best methods of meeting their ultimate needs, difficulties hard to be overcome may be created for the future.

Much time has therefore been given by Local Authorities, in consultation with the Board, to considering how beds can be provided at once, both economically and in such a way as will not interfere with future developments and requirements.

In envisaging what the ultimate requirements will be, we advise Local Authorities to take as a basis the estimates of the Wood Report as regards numbers, sex, age and mental grade. There is, of course, the possibility of variations of incidence in different areas, but the actual ascertainment of the more active authorities is the best evidence of the reliability of the Wood Committee's figures. As the knowledge of the defectives in an area increases the figures are seen to approximate more closely to the estimated average all over the country of 4·52 per 1,000, excluding feeble-minded children of school age. In seven areas this figure has now been exceeded, whilst in six others over 4 per 1,000 have been reported to Local Authorities. (See table on p. 49.)

As regards institutional requirements, the Wood Report estimated that a little over 2 per 1,000 of the population were in urgent need of institutional care. Four authorities are now maintaining a ratio of over 1·40 per 1,000 in Institutions. (See table on p. 49.) As some of these authorities still have cases awaiting admission to Institutions, it seems likely that the Wood Committee's estimate in this respect also would have been reached or even exceeded were it not for the shortage of institutional beds.

When the Local Authority has, in the light of these considerations, planned a lay-out adaptable for future requirements of their area, consideration should next be given to making a beginning in accordance with local conditions and the most urgent local needs. In this connection, the Board think that it may be useful to offer some general observations from the experience of past years on the most economical and advantageous use that can be made of available accommodation and its relation to the completed Colony, a question that is exercising the mind of many Local Authorities.

In the first place it is clear that provision will ultimately be needed for defectives of all grades and ages, either in the Colony itself or in transferred Public Assistance Institutions, which, in our opinion, should, wherever possible, form branches of the Colony. No Colony should, therefore, be planned to provide for an ultimate number of less than 500 beds, which allows the minimum classification.

In those areas where separate and suitable accommodation for defectives is available in Public Assistance Institutions it can clearly be used to the best advantage as supplementary accommodation to the Colony. It is therefore important to consider, before laying out the Colony, which cases can be sent to approved Public Assistance Institutions and which will benefit most by the special facilities provided in a Colony itself.

The difference between the Colony and the simpler form of accommodation provided in Public Assistance Institutions lies in the different possibilities usually available for training and treatment. In the Colony a staff of trained nurses, teachers and industrial instructors work under the direction of a medical superintendent, whilst the workshops, land and the space available for recreations provide facilities without which high grade defectives cannot be fully trained and economically occupied in the Colony or equipped for other forms of care outside. If these various advantages are to be found in a Public Assistance Institution and if a qualified staff can be provided, there is no reason why trainable groups should not be admitted. But in practice the facilities required for the higher grade defectives are seldom found to exist, whilst, as regards staffing, it proves uneconomical to duplicate the appointment of the skilled directors of departments enumerated above which already exist in the Colony. Speaking broadly, therefore, we should say that defectives most in need of training and treatment should be admitted to the Colony.

On the other hand, colony care is not essential for low grade adults and idiot children who have proved untrainable but who do not need special nursing, or who have reached their maximum development in the training departments of the Colony. Colonies are not, as a rule, planned on a sufficient scale to provide for all

cases indefinitely, and it is important that the danger of their silting up with less urgent cases should be prevented by the transfer of those who, under proper care, can live contentedly in the simpler and more restricted conditions of a Public Assistance Institution. It should, however, here be pointed out that as regards children there are difficulties and risks in accommodating small groups elsewhere than in the main colony. The numbers of low grade children who are incapable of benefiting from training as regards habits, behaviour and manual capacity and who at the same time do not need special nursing, are very few. In most areas they would form an uneconomical unit if cared for apart from the other defective children, as small units cannot be properly staffed except at an unduly high cost. There is a risk, too, in isolated units, of individual children missing the full facilities provided in the colony for proper classification and for promotion from one class to another in the event of unforeseen improvement. We recommend, therefore, that Public Assistance accommodation should in the first place be made full use of for low grade active adults. We should like to point out also that in areas where no accommodation is available in Public Assistance Institutions the maintenance of these lower grade defectives in simple buildings forming part of the colony is likely to be equally economical and more satisfactory than caring for them in separate institutions.

Turning now to the cases for whom colony care is most desirable, it is generally agreed that these should include all who are young and trainable; all who are sufficiently high grade to appreciate colony life and surroundings; those who are troublesome and therefore in special need of skilled handling and control; and the small group of helpless cases who need special nursing care.

All trainable children will find in the colony the fullest facilities for classification and the training they need if their faculties are to be developed to the utmost. These will include imbeciles whose future usefulness and behaviour depends largely upon the training they receive in the class-room, as well as children of a higher grade who will develop into good manual workers.

For the young and active adults the colony possesses numerous workshops and land, which besides being the best training ground for young defectives, are of economic importance to the colony. There is also space available for playing fields, gardens, playgrounds, guiding, scouting and for all those activities which form the vital centres from which the strength and happiness of the patients radiate. Without them the staff is as powerless to treat the mentally defective as the sick-nurse would be in a hospital where no provision was made for physical illness. The possibility of social training, which is peculiar to the colony, may, moreover, lead to the defective's stabilisation and to his return

to community life. That this is already being done in some colonies is shown by the figures given on p. 63 relating to licence.

Finally, the lowest grade helpless children and adults who need constant and skilled nursing attention should be cared for in the colony where the standard of medical and nursing care is high and where buildings are adapted to their needs.

The foregoing paragraphs have indicated generally what patients can be adequately cared for in Public Assistance Institutions and what cases will require treatment in a Colony ; and of what elements the completed Colony will ultimately consist. It will be useful to consider next by what stages the colony should be developed and what compromise can be made at the beginning that will effect economies with least detriment to the patients.

From the beginning certain essentials must clearly always be preserved. The conditions must be healthy, there must be facilities for training, employment and recreation, nursing, control and supervision, and the classification must be such as to ensure that the patients do not suffer mentally or morally from close contact with unsuitable companions.

The first step in providing beds, if, as often happens, the property includes a house, is usually its adaptation for a particular group of defectives. This involves no capital expenditure in new building. Villas forming part of the final lay-out are added as the Local Authority can afford it and the types that can be admitted to the Colony are slowly increased.

In the actual provision of beds we doubt whether further economies can be suggested that may not interfere with the essential conditions mentioned above. But as regards the administrative buildings, many sacrifices are being made with a view to reducing immediate expenditure. The building of a central kitchen in many cases is being postponed and cooking is being done in each villa ; recreation halls are being dispensed with, although admitted to be essential to the well-being of the Colony and ultimately, therefore, an administrative necessity. Temporary structures are being used for workshops and class-rooms and one building is being made to serve for many purposes.

At the same time every effort is being made to help Local Authorities by agreeing to the adaptation of Public Assistance Institutions for the immediate accommodation of certain groups where such adaptation is in any way possible. The utilization of a Public Assistance Institution as the nucleus of a Colony has also been sanctioned.

Although a criticism often levelled at the Board is that this standard of classification involves unnecessary expenditure, we believe that the practical consequences of any relaxation of the present minimum requirements would prove uneconomical and add to administrative difficulties for the following reasons :

In addition to the separation of males from females and of children from adults, we ask for a minimum classification in accordance with mentality into three groups—cot and chair cases and idiots, low to medium grade, and medium to high grade. When the wide divergence of grade amongst defectives is considered and it is remembered that they share the feelings, good and bad, of other human beings, the reasons for this classification become clear. Uncongenial companionship leads to deterioration and discontent amongst the patients and to discouragement and possibly to callousness amongst the staff. The close association of low grade defectives with those of greater intelligence may also lead to an increase of bullying and of viciousness. The lower grade suffer from being always the underdog, whilst those of a higher mentality, if deprived of equal companionship and of a more normal outlook, lose hope and all incentive to good behaviour. A large part of the training in a colony consists of a gradual stabilizing process through widening of interests and increased responsibilities in work and play. This training is impossible in a very mixed group; all grades will remain untrained and discontented and there will be little likelihood of any improving sufficiently to be placed out in the community. The only remedy for the dangers of mixed classification would be the appointment of a greatly increased and extravagant staff.

The picture may seem a dark one, but we believe it will be borne out by the experience of many of the colonies where the delay in building schemes has resulted in the temporary admission of a deplorable mixture of cases. A gallant struggle is being made by the staff to overcome these temporary difficulties in newly-opened colonies and we believe that all who have had practical experience will agree that further relaxations of standard would result in failure and waste of effort.

The present position with regard to accommodation.

(a) *Beds provided by Local Authorities.*—The total number of beds in Certified Institutions provided by Local Authorities is 13,172. Of this number 2,146 were provided during the past year. The principal changes during 1932 relate to the adaptation of the mansions on the Botley's Park, Brandesburton Hall, Cranage Hall and Stretton Hall estates; the completion of the extensions at Meanwood Park Colony; the erection of villas at Dovenby Hall Colony, St. Catherine's Colony, and South Ockendon Colony; the provision of temporary accommodation in Northumberland; and the transfer to the Mental Deficiency service of Great Barr Park Colony; Murray House, Chertsey; Clerk's Croft, Bletchingley; and the Heckingham Institution, Norfolk.

The 65 Authorities who have provided accommodation under Section 30.(c) of the Act of 1913 are as follows:—

	<i>Beds</i>		<i>Beds</i>
Bedfordshire and Northamptonshire Joint Board (Bedford C., Northampton C. and Northampton C.B.)		Leicester C.B.	
Bromham House ...	24	Leicester Frith	272
Birmingham C.B.		Leicestershire and Rutland Joint Board	
Coleshill Hall	300	Stretton Hall	50
Monyhull Colony	1,230	London C.	
Bradford C.B.		Brunswick House	75
Ashfield	50	Farmfield	133
Westwood	50	Manor	1,271
Bristol C.B.		South Side Home	80
Hortham Colony	608	Middlesex C.	
Buckingham C.		Middlesex Colony	320
Manor House, Aylesbury	99	Bramley House	50
Cheshire Joint Board (Chester C. and Chester, Birkenhead and Wallasey C.Bs.)		Crauford Home	116
Crnage Hall	62	Newcastle-on-Tyne C.B.	
Croydon C.B.		Shotley Bridge Colony ...	400
6, Morland Road	20	Norfolk C.	
Cumberland, Westmorland and Carlisle Joint Committee		Little Plumstead Hall ...	70
Dovenby Hall Colony ...	185	Heckingham Institution	71
Denbigh C.		North-Eastern Counties Joint Board (Darlington, Middlesbrough, South Shields, Sunderland, Tynemouth and West Hartlepool C.Bs.)	
Coed Du Hall	72	Prudhoe Hall Colony ...	422
Derby C.B.		Northumberland C.	
Thornhill... ..	39	Cowpen Hall	32
Devon C.		Greenholme Institution,	
Stoke Lyne	52	Haltwhistle	43
Glamorgan C.		Rothbury Institution	28
Drymma Hall	79	Norwich C.B.	
Hensol Castle	100	Eaton Grange	37
Halifax C.B.		Nottingham C.B.	
Craigie Lea	28	Aston Hall	108
Hampshire Mental Health Institutions Joint Committee (Southampton C., Bournemouth C.B. and Southampton C.B.)		Sheffield C.B.	
Coldeast Colony	147	Cliffe House	29
Tatchbury Mount	56	Hollow Meadows	58
Ipswich C.B.		Wales Court	50
Handford Home	22	Somerset C.	
Kent C.		Sandhill Park, with ancillary premises :—	
Leybourne Grange	94	Cambridge House,	
West View, Tenterden ...	180	West End House and	
Kingston-upon-Hull C.B.		Yatton Hall	466
Tilworth Grange	83	Stoke-on-Trent C.B.	
Lancashire Mental Hospitals Board		Stallington Hall... ..	77
Calderstones	2,726	Surrey C.	
Leeds C.B.		Botley's Park, with ancillary premises :—	
Kepstorn	40	Murray House	353
Meanwood Park Colony	428	Clerk's Croft	88
		Walsall and West Bromwich Joint Board	
		Great Barr Park Colony	607

	<i>Beds</i>		<i>Beds</i>
Warwick C.		Mid-Yorkshire Joint Board (Leeds, York, Halifax and Kingston-upon-Hull C.Bs.)	
Weston Colony ...	58	Mid-Yorks Institution ...	214
West Ham C.B.		South-West Yorkshire Joint Board (Barnsley, Dewsbury, Doncaster, Halifax, Huddersfield, Rotherham and Wakefield C.Bs.)	
South Ockendon Colony	134	St. Catherine's ...	140
West Wales Joint Board (Cardigan, Carmarthen, Pembroke, Brecon and Radnor Cs.)		West Riding C.	
Pantglas Hall ...	90	Oulton Hall ...	164
Wiltshire C.		Rawcliffe Hall ...	121
Pewsey Colony ...	81	The Mansion ...	60
Yorkshire :			
East Riding and York Joint Board			
Brandesburton Hall ...	30		

Plans of the following schemes have received statutory approval and the buildings are in course of erection :—

	<i>Beds</i>
Westwood Colony (Bradford C.B.) ...	240
Laughton Lodge (Brighton C.B.) ...	34
Cell Barnes Colony (Hertford C.) ...	600
Brandesburton Hall (East Riding and York Joint Board)	91
Little Plumstead Colony (Norfolk C.) ...	220
Pantglas Hall (West Wales Joint Board) ...	27
Heckingham Institution (Norfolk C.) ...	108
Oulton Hall (Yorks, West Riding C.) ...	100
Borocourt (Bucks, Oxon and Reading Joint Board) ...	207
Shotley Bridge Colony (Newcastle-upon-Tyne C.B.) ...	40
Pewsey Colony (Wiltshire C.) ...	120
Clerk's Croft, Bletchingley (Surrey C.) ...	14
Caistor Institution (Lindsey C.) ...	118
St. Catherine's Colony, Doncaster (South-West Yorkshire Joint Board) ...	160
Hawarden Institution (Flint C.) ...	56
Brockhall (Lancashire Mental Hospitals Board) ...	360
Weston Colony (Warwick C.) ...	50
Coldeast Colony (Hampshire Joint Mental Health Institutions Committee) ...	450
Prudhoe Hall Colony (North-Eastern County Boroughs Joint Board) ...	200
Middlesex Colony, Shenley (Middlesex C.) ...	220
Hensol Colony (Glamorgan C.) ...	320
Royal Eastern Counties Institution (Cambridge C., Essex C., and East and West Suffolk Joint Committee) ...	444
Leybourne Grange Colony (Kent C.) ...	300

The following schemes have been approved in principle :—

	<i>Beds</i>
Cranage Hall Colony (Cheshire Joint Board)	314
Aston Hall (Nottingham C.B.)	237
School Aycliffe Colony (Durham C.)	360
Coleshill Hall (Birmingham C.B.)	120
Tilworth Grange (Kingston-upon-Hull C.B.)	67
Wem Institution (Salop C.)	61
Easingwold Institution (Yorkshire, North Riding C.) ...	90
Royal Western Counties Institution (Langdon Farm), (Devon C., Somerset C., Dorset C., Plymouth C.B., and Exeter C.B.)... ..	320
Harmston Hall (Lincolnshire Joint Board)... ..	254

The following Local Authorities have not yet provided institutional accommodation, although some of them have schemes under consideration :—

Anglesey C.	Isle of Wight C.
Burton-on-Trent C.B.	Merioneth C.
Caernarvon C.	Newport C.B.
Cornwall C.	Nottingham C.
Coventry C.B.	Monmouth C.
Dudley C.B.	Portsmouth C.B.
Eastbourne C.B.	Smethwick C.B.
East Sussex C.	Soke of Peterborough C.
Hastings C.B.	West Sussex C.
Hereford C.	Wolverhampton C.B.
Huntingdon C.	Worcester C.B.
Isle of Ely C.	Worcester C.

(b) *Other beds provided.*—The following accommodation was available on 1st January last, in addition to that provided by Local Authorities in certified institutions under section 36 :—

	<i>Beds</i>
In Certified Institutions (Section 36)	8,747
In Public Assistance Institutions approved under Section 37 of the Mental Deficiency Act (including Darenth Training Colony, the Caterham, Fountain and Leavesden Mental Hospitals, and Seafield House) ...	9,544

(c) *Hostels.*—A new hostel has been opened during the year, Wharf House, Lewes, a branch of The Hermitage Training Home.

The following institutions function solely as hostels and receive patients in the first instance on licence from other certified institutions :—

Eagle House, Mitcham (Surrey Voluntary Association for Mental Welfare). (Women.)
Royal Fort Home, Bristol (The Committee of Management). (Women.)
Royal Hostel, Elstead (Surrey Voluntary Association for Mental Welfare). (Men.)
The Old Rectory, Bath (Bath Voluntary Association for Mental Welfare). (Women.)

Patients are also sent out to daily work from the following institutions. Those marked * have separate hostel branches :—

- Royal Eastern Counties Institution. (Women.)
- *The Manor (London C.). (Women.)
- *Royal Western Counties Institution. (Men and Women.)
- *Warwick Branch of State Institution. (Women.)
- South Side Home (London C.). (Women.)
- Farmfield (London C.). (Men.)
- Brunswick House (London C.). (Men.)
- *Meanwood Park (Leeds C.B.). (Men and Women.)
- *The Hermitage. (Women.)
- *Caterham (London C.). (Men.)
- Dungates. (Men.)

(d) *Approved Homes and Certified Houses.*—There are now 38 Approved Homes and 8 Certified Houses approved by the Board containing 744 and 280 beds respectively. During the year 4 new Approved Homes have been opened.

In the best of these Homes the devoted care and training provided is equal to any we know, and there is no doubt that they answer a real need amongst parents who do not wish to place their children under order.

In enterprises dependent upon the character and circumstances of one individual, however, there is always a danger of a wide variation in the standard of work. This variation is very marked in the present Approved Homes and Certified Houses, and we wish this year again to give our reasons for continuing to discourage all persons from opening private Homes unless they are in a good financial position and are qualified by personality and experience to care for defectives and to maintain a high standard of nursing and training amongst their staff.

Many applicants come to discuss with us the openings for starting a private Home and they are always warned of the following difficulties which may have to be faced.

There are not now many parents who can afford to pay more than £150 per annum for their mentally defective child and, as far as we know, there is no shortage of accommodation in Homes where such fees are charged. It may not be easy therefore to fill the Home with suitable cases, and this difficulty is increased by the classification prescribed by the certificate. On the other hand, experience shows that in small Homes where children are received at a lower fee it is a hard struggle to meet the everyday expenditure on such essentials as a trained staff, good food and equipment. The capital expenditure in adapting any private house for the purpose of a Home must be considerable and should also be borne in mind.

We therefore invite everyone who is contemplating starting a private Home to consider seriously whether they have any assurance of filling their beds and whether they can afford the possibility of working at a loss during the first years without allowing the patients to suffer.

3. COMMUNITY CARE.

We have now considered the Local Authority's duties to ascertain what persons in their area are defectives subject to be dealt with and to provide suitable and sufficient accommodation in Certified Institutions for those for whom supervision affords insufficient protection. It remains to consider what are the forms of community care provided for in the Act and how they are being used.

Licence, guardianship, statutory supervision and the provision of training centres and of home training are all methods for helping the parents or guardians of defectives to look after them in the community and to avert the need for permanent institutional care.

It is easy to overlook the needs of these parents and guardians. For the normal child and adolescent, schools, clubs, employment exchanges and other educational facilities are easily available, but the parent of the child who has been excluded from school may have to face his upbringing in isolation and without any of these aids of which he stands in special need through the very reason of the child's defect and of his difference from other children. In addition, there are the physical abnormalities which often accompany mental deficiency to add to the parents' burdens as regards care and expense.

It is small wonder that troubles arise, either through neglect which is often unintentional, or through failure to understand the defect, especially during the phase of adolescence when the high grade defective resents parental protection and control upon which in reality he is dependent.

These troubles, leading as they often do to the need for institutional control, can be mitigated by timely supervision and guidance. Much is already being done under the provisions of the Act to help parents and guardians to understand their defective charges and to make the most of their limited capabilities. Through the Local Authority's own officers or through the services of voluntary associations, supervisory visits are paid and occupational or industrial centres and clubs are organised in such a way as to lighten the burden of parents and guardians and to give the defective a good chance of living a harmless and even a useful life outside an institution. The value of visits in the home by experienced and sympathetic visitors is undoubted and is frequently acknowledged by parents and others in charge of defectives living in the community.

Community care is inexpensive as compared with care provided in an institution, but we wish to stress the fact that its effectiveness depends upon the knowledge and thoroughness with which it is organised and that its development, therefore, must involve some additional expenditure. Increasing use is being made by Local Authorities of licence, guardianship and supervision, but as will be seen below, in some areas community care is still prac-

tically non-existent. We are frequently told that suitable guardians and foster-parents are impossible to find, but we believe that it may not always be fully realized that the duties involved are arduous and cannot be properly carried out in addition to routine duties by an already hard-worked officer. The work done by the Brighton Guardianship Society, by the Guardianship Society of the Central Association for Mental Welfare, by the Devon Voluntary Association and elsewhere, shows conclusively that where a thorough investigation of a neighbourhood is made by experienced officers, employers and foster-parents can be found who are well qualified to undertake the care of defectives. It is, however, a slow process and must be followed up by continued supervision requiring time as well as tact and knowledge. Guardians as well as defectives need frequent help and advice, and it has been found desirable to make some arrangements for the defectives' free time as well as for their training and employment. This need has been met by the Central Association's Guardianship Society and in Devon by organizing leisure clubs attended by the girls on their free afternoons, and the Brighton Guardianship Society has this year opened a recreation club for lads at Woodingdean.

The failure on the part of the Local Authorities to meet their needs locally as regards licensees and guardians is leading to defectives being sent to the care of the two Guardianship Societies, often far from their own homes and from the area to which they belong. This is to be deplored, as we believe the Guardianship Societies would be the first to agree, and there is an urgent need at the present time for the development of local guardianship schemes carried out in close co-operation with the institutions in the area.

The following facts and figures show the extent to which use is now being made of licence, guardianship and statutory supervision.

(a) *Licence.*

On 1st January, 1933, there were 1,592 defectives on licence from Institutions, an increase of 89 on the preceding year. During the year 385 had for various reasons been recalled to institutions from licence and 59 transferred to Guardianship.

This year information has been obtained, through the kindness of Medical Superintendents and of Local Authorities, which enables us to compare the way in which licence is being used in some of the larger institutions.

The following table shows for the 1st January, 1933 :—

1. The proportion of defectives out on licence to the number of defectives in the institution.

2. The proportion of defectives on licence who were—

(a) In their own homes.

(b) Wage earning.

Name of Institution.	On the books.			On licence.		Proportion (per cent.) of cases on licence.	
	Number.			Number.		At Home.	Wage earning.
	M.	F.	T.	M.	F.			Proportion (per cent.) of total on the books.
The Manor...	653	683	1,336	73	65	77.5	55.1
Royal Western Counties Institution ...	495	268	763	53	23	34.2	59.2
Royal Eastern Counties Institution ...	862	597	1,459	49	81	30.8	37.7
Calderstones ...	1,565	1,289	2,854	148	53	89.6	60.2
Darenth ...	1,022	814	1,836	44	48	47.8	52.2
Meanwood Park ...	119	243	362	9	7	*	*
Prudhoe Hall ...	176	230	406	5	9	*	*
Stoke Park ...	674	926	1,600	16	16	*	*
Monyhull Colony ...	597	659	1,256	7	16	*	*
Great Barr Colony ...	251	325	576	4	0	*	*
Royal Albert Institution...	546	275	821	4	2	—	—

* Proportion not given as the number of cases on licence is small.

From these figures and from other information given, a wide divergence is seen to exist, both in the extent to which licence is used and in the methods employed.

As regards the numbers out on licence a strict comparison between different institutions may be misleading owing to the varying proportion of children to adults and of low to high-grade cases. For instance, at Monyhull an exceptionally high proportion of the adult patients are epileptic (223 out of 928 adults), whilst at the Royal Western Counties Institution and at The Manor the proportion of high grade cases is higher than in an institution such as the Royal Eastern Counties Institution, which provides for all grades and ages of defectives in the area on a non-selective basis. But on looking into the question more closely these differences are clearly not the main explanation of figures that vary from 10·3 per cent., 10·0 per cent. and 8·9 per cent. at The Manor, Royal Western Counties Institution and Royal Eastern Counties Institution, to 1·8 per cent. at Monyhull and 2 per cent. at Stoke Park; whilst at the Royal Albert and Great Barr they are so small as to be negligible. Aims and methods of administration also differ widely and it may be of interest to consider some of these differences in so far as they affect the use of licence.

There is a general agreement amongst Superintendents that the basis of selection of cases for licence should be stability of behaviour and, in the higher grade cases, capacity for useful work. The procedure in the selection of licensees and methods of supervising defectives on licence is much more varied. In some institutions a systematic scheme of training is planned leading on to parole, to daily work from hostels and to licence outside, and in these institutions machinery also exists for finding suitable licensees. In others, little thought appears to be given to re-establishing defectives in the community and no responsibility is accepted for those who leave the institution; there are no means at hand for placing cases out; and the granting of licence depends more upon the persistence of relatives and friends than upon the suitability of the defective for this form of treatment. We may point out here that two of the institutions where licence is most widely and very wisely used are amongst those which send out the smallest percentage on licence to their own homes (30·8 and 34·2). At Calderstones, where less use is made of licence, as many as 89·6 per cent. are living with relatives. The large number of these who are wage-earning indicates that this is an important factor in the selection of cases sent out on licence.

In each of the three institutions where licence is most extensively used individual methods have been evolved and are now in practice.

At The Manor, where a large proportion of cases are living in their own homes, there is also a resident service scheme for girls

in domestic service in the neighbourhood of the Colony. Prospective mistresses are interviewed by the Medical Superintendent and their responsibilities explained and arrangements made as to wages, hours of duty, free time, etc. All the service girls are Guides, and every girl visits the Colony at least once a week for Guiding. Close contact is thus maintained with the girls and an opportunity provided for them to be seen by the Medical Superintendent. The decision as to licence, in cases leaving the locality, rests with a Sub-Committee on consideration of reports submitted by the Medical Superintendent on the patient's history, conduct, mental condition and ability to work and by the London County Council's enquiry officer on the home conditions and amount of supervision available.

At the Royal Western Counties Institution a Guardianship Sub-Committee of the Voluntary Association is employed to find suitable homes and to make all the necessary enquiries about the conditions and character of prospective employers. The Superintendent then selects from amongst the patients recommended for licence one suitable for the particular licensee in view, who may require a good worker or may be prepared to give the constant care required by a lower grade defective. All patients on licence are regularly visited by the Guardianship Officer who makes arrangements about the banking of wages, pocket money, purchase of clothing, holidays and the numerous details that require continuous adjustment if the machinery for licence is to run well and smoothly.

At the Royal Eastern Counties Institution situations for girls are investigated by the Matrons of Hostel branches in conjunction with the Medical Superintendent who is personally responsible for the selection of all cases sent out on licence and visits them once a year. In the case of defectives licensed to foster parents the homes are found and visitation undertaken by Voluntary Associations; where defectives are sent to their own homes arrangements are also made through Voluntary Associations and through the responsible Local Authority. It is interesting to note the conclusion arrived at in this institution, that girls should not be sent out on licence to situations where they are too far away to return to the hostel branch in their free time. All the service girls return to the hostel regularly for leisure and recreation and are in close touch with the Matron who supervises their money affairs and watches their progress. It is noteworthy too that this is the only institution where any considerable use is made of foster parents for well trained, lower grade defectives. Forty-one cases are placed out in this way who are able to do some work, though not enough to rank as wage earners.

The three institutions mentioned above all have hostel branches. Meanwood Park has also more recently organized daily work for defectives from hostels and is trying the experiment of engaging a social worker as a member of the staff of the Kepstorn branch.

The numbers returned to institutions during the year because they have failed or have proved unsuitable for licence are, on the whole, small. On the other hand a considerable number come back temporarily for other reasons such as change of situation, illness, holidays, etc., and it is noticeable that this number tends to be greater where licence is most systematically used and where the Institution is in fact the mother Institution to which defectives return for help in difficulties and for rest.

An interesting fact emerges in relation to paid employment for boys. When the Hostel in connection with the Royal Western Counties Institution was opened farmers known to be suitable employers were informed that boys were available for daily employment at rates of wages fixed by the Agricultural Wages Act Committee at 18s. to 25s. weekly, less National Insurance. The demand for labour here is said to be generally good.

The opinion expressed last year in our Annual Report that prolonged licence is often the best and most practicable means of ensuring the necessary community care for defectives who have left institutions is confirmed by the figures from two institutions where 31 and 28 cases respectively have been out on licence for over three years.

In concluding these remarks we should like to add two warnings. In the first place, lest we have given the impression that the criterion of efficiency in a licence scheme lies in the number sent out, we would say emphatically that success depends first upon institutional training and next upon the after-care service. Secondly, we would advise young colonies to proceed slowly. The training and socialization of defectives is often a matter of years and premature licence leads to waste of effort and expense. But there is every reason to plan from the beginning the method by which this contact with the community will in later years be achieved.

There is great need in some areas for the establishment of this service and in others for its extension, and we agree with those Superintendents who have expressed the opinion that any extension should be accompanied or preceded by the development of hostels in suitable centres. Besides playing an important part in the re-socialization of defectives, small hostels in connection with the main Institution form perhaps the most practical and the safest centres round which to start a licence scheme.

Colonies are now looked upon as training schools, and one of the justifications of their position is the number of stabilized defectives that they can return to the community either as workers or to the care of parents or foster parents. But the responsibility of the Colony does not cease there. By continuing to accept responsibility for defectives who are living outside we believe that Colonies are serving the best interests both of the defectives and of the community.

(b) Guardianship (Section 30 (d)).

The number of cases under guardianship on 1st January, 1933, was 2,558, an increase of 359 on last year's figures.

In last year's Annual Report it was shown that the methods of guardianship in different areas differed widely, and from the figures given it was inferred that an injudicious use of guardianship as a form of out-relief was neither economical nor effective. Two groups of defectives also were contrasted, one on licence from institutions and one under guardianship, and the evidence indicated that those trained in institutions succeed better in the community than those who have received no such training. Out of 300 cases on licence from institutions 178 were wage earners, of whom 110 were self supporting. On the other hand in the group of 207 cases under guardianship only 22 were found to be wage earners.

Nevertheless there are many cases for whom guardianship provides the most suitable form of care. These include defectives living at home where the parents need some financial help, others where the power conferred by guardianship is a definite advantage to the parent in controlling their defective child, and others again who are living with employers or with foster-parents and who are sufficiently stabilized to remain in the community.

The fact that there are this year 16 Local Authorities who have no case under guardianship and 22 others who have only one or at the most two cases, shows that full use is still far from being made of this valuable provision under the Act.

(c) Supervision (Section 30 (b)).

The number of cases under statutory supervision on 1st January, 1933, was 29,735, an increase of 1,765 during the year.

Increase during—1931, 2,360.
1930, 2,004.
1929, 3,100.

Defectives under voluntary supervision numbered 22,537, as compared with 21,079 last year.

Experience shows that the duties of supervision may be effectively carried out in many different ways, provided that there is available a qualified officer with specialized knowledge of mental defect working in close co-operation with the Medical Officer of Health or with the Mental Deficiency Medical Officer.

In districts where voluntary associations have been organized this work is usually delegated to them by the Local Authority. A voluntary association has, as a rule, in its Secretary the qualified officer referred to above who, in many districts, is able to make use of voluntary visitors. In many areas voluntary associations are also made responsible for the organization of day training centres and of home training schemes which are so closely inter-

related with the duties of supervision. As examples of the advantages of this system we should like to cite :—

Somerset—where in every village there is a voluntary visitor, amounting to 265 in all, with professional help always at hand for new and difficult cases, emergencies and the organization of day training ; *Staffordshire*—where ten local Committees have been organised by the voluntary association for the purpose of supervision and the organisation of training centres, and where quarterly staff conferences and a yearly study week are held for members of the staff and voluntary workers ; *Suffolk*—where the importance of helping parents and guardians to provide definite occupation for the defective is specially stressed and where home training is included in the supervising visits ; *Darlington and Buckinghamshire*—where very active use is made of voluntary help.

We believe that the encouragement of voluntary workers, acting under the general direction of experts, promotes amongst the public a practical and sympathetic understanding of the work which is apparent in the above-named areas. For the co-ordination of mental health work there are other undoubted advantages in entrusting to a responsible voluntary association the visitation of statutory supervision cases in addition to their work amongst border line cases and defectives who are not “ subject to be dealt with.”

On the other hand, some Local Authorities carry out their duties relating to community care with great thoroughness through their own officers and through After-Care committees specially appointed for the purpose. In Birmingham the work of statutory supervision and the organization of training centres is carried out through the after-care sub-committee, whilst in Leicester a joint advisory after-care committee, composed of four members from the mental deficiency committee and four from the education committee undertake supervisory duties. In Derbyshire supervision is carried out by health visitors, one of whom has been given training in mental deficiency work and acts as superintendent of the department under the Medical Officer of Health. The advantages in these methods are the close working arrangements between the mental deficiency committee and the local education committee, and also the use made of health visitors, who in the course of their routine work have exceptional opportunities for finding guardians and licensees amongst the families they visit and also for helping in the work of ascertainment. In some areas it is felt that the advantages of carrying out the work directly under the Local Authority's own mental deficiency officers outweigh the advantages of unofficial co-operation ; Croydon and Warwickshire are examples of areas in which all the mental deficiency work, including the organization of occupation centres, is carried out in this way.

Close co-ordination between the statutory and voluntary work in the community is also often secured by combining in one person the post of Enquiry Officer to the Mental Deficiency Committee and Secretary of the Voluntary Association.

The value of supervision as a means of keeping in touch with and affording training to defectives who show no immediate need for guardianship and institutional care is generally recognized. There are, however, still the following Local Authorities who have made no use at all of this valuable preventive measure :—

Carmarthen C.	Nottingham C.
Huntingdon C.	Pembroke C.
Merioneth C.	South Shields C.B.
Merthyr Tydfil C.B.	

In addition, the following have less than ten cases under statutory supervision :—

Cardigan C.
Dudley C.B.
Wallasey C.B.

4. DAY CENTRES, CLUBS AND HOME TRAINING.

One hundred and eighty centres are now functioning (1st January, 1933). These include :—

	Conducted by—	
	Voluntary Associations.	Local Authorities.
Occupation Centres	112	41
Industrial Centres and Classes ...	14	5
Clubs and Evening Classes	8	—

Ten centres have been opened during the year; thirteen have been closed or, in a certain number, two or more centres have been merged into one.

Fifty Occupation Centres and seven Industrial Centres are whole-time, i.e., are open for 10 or 11 sessions weekly.

The clubs meet for recreation and handwork under the auspices of voluntary associations. Valuable help is given by voluntary workers, and five of the clubs are managed by Toc H, four for boys and one for girls.

The number of cases on the registers of all centres on 1st January, 1933, was 3,494. This number is classified as follows :—

Under Statutory Supervision	2,524
Under Voluntary Supervision	465
Under Guardianship	455
On Licence	50

Home training is being introduced in several areas as part of the visitors' duties, while in others it has been systematically developed under specially trained officers.

On looking back over the past five years it is encouraging to see the improvement that has taken place in the general standard of training provided in day centres. This is apparent at our visits of inspection, and is largely due to the experience that is accumulating as to the needs of defectives living in the community and to the opportunities that have now been so largely offered to centre supervisors to enlarge their knowledge by attendance at the short courses organized by the Central Association for Mental Welfare. In the larger areas the appointment of a district supervisor has perhaps done more than anything else to raise the standard of training and to develop the work. It is satisfactory also to note the increasing frequency with which medical inspection, sometimes with routine visits from the school nurse, is arranged for in centres. From the above it will be seen that there are now 57 whole-time centres, where a meal is provided. These whole-time centres are at a great advantage in providing training that aims at improving habits and behaviour and at encouraging manual capacity.

Nevertheless the numbers in attendance at centres are increasing very slowly and there are still many urban areas in which no attempt at all has been made to organise day training which, since the passing of the 1927 Act, it has been the duty of the Local Authority to provide. We do not think that day training should be looked upon as a luxury. Community care, as has already been pointed out, is a preventive form of care in the sense that it may prevent social evils and obviate the need for more costly institutional methods. But the further we advance in devising methods of community care the more apparent it becomes that the efficacy of these methods depends upon some provision being made for training, occupation and employment. In the guardianship schemes which have been started the necessary employment for high-grade defectives is provided by placing them in suitable situations, supplemented by recreational leisure clubs. But we believe there is scope for much further development in the boarding out of defectives on licence or under guardianship in the neighbourhood of well organized whole time occupation and industrial centres. Such a scheme would include low grade defectives, trained and stabilized in institutions, who could be placed out with foster parents if daily occupation were provided, and the higher grade who in an industrial centre would contribute to their own support. In addition to facilitating boarding out, attendance at a centre adds greatly to the efficacy of the supervision that can be exercised over defectives living in the community.

In last year's Annual Report details were given about the organization of some of the more active centres. This year we propose to discuss points on which the value of centres depends and which will be of interest to authorities concerned in their administration.

Escorts and Conveyance.

There is a consensus of opinion that one of the obstacles in the way of increasing attendance is the difficulty of conveying the children to and from the centres. Some can always be brought by parents, although this is apt to lead to irregular attendance, and some of the older ones can come alone. But there remain a large number, especially in outlying districts, whose parents are anxious for them to attend, but where the difficulty and expense of providing an escort appear insuperable. In most districts a system of guides has been organised to pick up small groups of four or five children in different areas of the town.

In Cardiff there is co-operation between the escorts for the Occupation Centres and the Special Schools which facilitates arrangements for bringing children from outlying districts, and in many areas a reduction is made in the bus and tramway fares.

The number of children each guide can convey, however, is limited, and in Leicester, Lowestoft, Oxford, Brierley Hill (Staffs), and Norwich, the hire of a car or bus is proving an economical and satisfactory alternative. In Leicester use is made of the Colony bus, whilst in the four other districts a large car or omnibus is hired. These conveyances bring from 10 to 35 children to the centres and cover distances varying from 5 to 28 miles at a cost of from 4½d. to 11d. per child. In many cases this would be less than the cost of an escort and tram fares and it enables certain children to attend who may be off the route of a tram or bus.

Training of Supervisors and value of District Supervisors.

We have already pointed out the improvement that has taken place in the general standard of training which may be attributed to the growing appreciation of the aims and methods employed in training lower grade defectives. In the course of our visits the benefits derived from the appointment of a district supervisor over a group of centres is very striking, and we wish to give our reasons for advising all the larger authorities to adopt this plan.

In the first place, the work of a Centre Supervisor is highly specialized and often has to be carried out under difficult conditions and in great isolation. The development of industrial centres for older boys and girls as distinct from occupation centres has helped to improve the classification as regards age and mental grade. But in the smaller centres the pupils still often vary in mentality from the young low grade child, who needs freedom and activity, to an ex-special school boy or girl or a defective on licence, who is capable of a fair standard of industrial work. This is a hard problem to be tackled single-handed by individual supervisors, some of whom have little experience of mental defect or of teaching methods and, although invaluable help and encouragement may be given at a short course, more

continuous guidance is needed to prevent training from degenerating into "minding" the children and the supervisor from sinking into a state of discouragement.

Several Authorities and Voluntary Associations are attempting to overcome these difficulties by appointing a trained district supervisor qualified by practical experience to supervise and to maintain a high standard in a group of centres.

This method has been adopted in Middlesex, Staffordshire, West Lancashire, Kent, Somerset, Wiltshire, Essex, Birmingham, Hampshire and Darlington. The number of centres under each district supervisor varies from 8 in Staffordshire and Kent to 3 in Hampshire. The district supervisor is able to introduce variety, fresh interests and a progressive scheme of training into all her group of centres, through her knowledge of varied handwork, physical training and teaching methods. She can also be made responsible for the purchase and intelligent use of material and equipment, for organising escorts, for emergency help in the case of illness and for the oversight of the half-yearly progress records. In certain districts group conferences have been arranged, giving opportunities for lectures and discussion and for courses of practical instruction in handwork and physical training which have proved invaluable in maintaining interest and progress.

Premises leased or bought for Centres.—An account was given in last year's Annual Report of the house leased in Liverpool and organised by the West Lancashire Association for Mental Welfare as a centre for children, older boys, older girls, for industrial evening classes and for an evening club. The following centres now also occupy premises leased or bought for the purpose:—Manchester, Croydon, Leeds, Nottingham and Aberdare.

5. DISCHARGES.

The total number of cases discharged from Order during the year is 215.

Of this number:—5 were discharged from the State Institution (3 of whom on account of Special Reports and Certificates); 192 were discharged from Certified Institutions (100 of whom on account of Special Reports and Certificates); 18 were discharged from Guardianship (7 of whom on account of Special Reports and Certificates).

6. GENERAL SUBJECTS.

(a) *Mental Deficiency and Crime.*

We have continued during this year to keep a record of the mentally defective patients dealt with in consequence of the commission of a criminal offence.

The age grouping of the 313 cases is given here.

Under 16 years of age	...	...	43
16 to 21 years of age	...	...	173
21 to 30 years of age	...	...	61
Over 30 years of age	...	...	36
			—
Total	...	...	313
			—

The figures show a high incidence of crime in the adolescent period. Defectives who have left the ordinary or special schools and who have attained the physical maturity of approaching manhood find more opportunity for independent action and, in consequence, are more likely to fail and to express that failure in reactions inimical to the interests of their fellow beings. In common with normal boys and girls they are subjected to the stresses of adolescence which, by reason of mental defectiveness, they are less fitted to bear.

Of the 313 cases dealt with, 72 (23 per cent.) had previously been notified to the Local Authority by the Local Education Authorities or had been otherwise ascertained.

On the other hand 241 (77 per cent.) were dealt with under the statute for the first time in consequence of their criminal behaviour.

There were many more men, 263 against only 50 women; the preponderance of offences by males is not exceptional.

The nature of the offences gives some indication of the serious consequences of lack of control and supervision in the early after-school period. Sexual offences were committed by 69 patients, 40 of whom had made indecent assaults on women and children. Our experience of such cases is that the offence with which the patient is charged represents only a sample of the actual crimes committed. The direct and indirect effects on normal members of our social unit cannot be calculated, but it is evident that care and supervision of the defective is necessary, often as much in the interest of society as of the defective himself.

(b) *Committee on Sterilization.*

On 9th June, 1932, the Board of Control, with the approval of the Minister of Health, appointed a Departmental Committee:—

“ To examine and report on the information already available regarding the hereditary transmission and other causes of mental disorder and deficiency; to consider the value of sterilization as a preventive measure having regard to its physical, psychological, and social effects and to the experience of legislation in other countries permitting it; and to suggest what further inquiries might usefully be undertaken in this connection.”

The members of the Committee are :—

L. G. Brock, Esq., C.B. (Chairman),
 Wilfred Trotter, Esq., F.R.S., M.D., M.S., F.R.C.S.
 R. A. Fisher, Esq., Sc.D., F.R.S., F.R.A.S.
 A. F. Tredgold, Esq., M.D., F.R.C.P., M.R.C.S., F.R.S., Ed.
 Miss Ruth Darwin.
 E. W. Adams, Esq., O.B.E., M.D.
 R. H. Crowley, Esq., M.D., F.R.C.P.,
 E. O. Lewis, Esq., M.A., D.Sc., M.R.C.S., L.R.C.P.

Mr. F. Chanter of the Board of Control was appointed Secretary of the Committee.

The Committee held its first meeting on 23rd June, 1932, and has since that date held regular meetings at which a number of witnesses have appeared. The Committee is still continuing its deliberations and hopes to be able to report to the Minister of Health in the autumn of the present year.

(c) Defectives in Mental Hospitals.

An enquiry started last year in two mental hospitals showed that 11 per cent. of the patients were defectives who were suitable for transfer to a Mental Deficiency Colony or to Public Assistance Institutions set aside for the mentally defective. This investigation is being continued in other areas and further information will be available in the course of the present year.

7. NUMBERS UNDER CARE.

The mentally defective patients under care on 1st January, 1933, numbered 65,893 (males 33,344, females 32,549). Included in this total are the cases under statutory supervision, which numbered 29,735 (males 15,715, females 14,020).

A summary of the patients in Institutions and under Guardianship is given on the following page, and it is interesting to note that of the total of 36,158 patients under these forms of care only 16 per cent. (males 20 per cent., females 13 per cent.) were under 16 years of age.

During 1932 there were increases of 74 in the State Institution, 2,529 in Certified Institutions, 15 in Certified Houses, 4 in Approved Homes, 327 among those under Guardianship or Notified, and 1,765 among those under Statutory Supervision, while there was a decrease of 147 in Public Assistance Institutions and Public Health Hospitals approved under Section 37. These changes resulted in a net increase of 4,567 under care.

SUMMARY OF MENTALLY DEFECTIVE PATIENTS ON THE BOOKS OF INSTITUTIONS AND UNDER GUARDIANSHIP ON 1ST JANUARY, 1933.

Where maintained.	Received under the Mental Deficiency Acts, 1913 to 1927.						Received outside the Mental Deficiency Acts.			Total of all Mental Defectives in Institutions and under Guardianship or Notified.				
	Under Orders (secs. 6-9).			Not under Orders (sec. 3).			Total.			M.	F.	T.		
	Non-criminal.		Criminal.	M.	F.	T.	M.	F.	T.					
	M.	F.	M.	F.	M.	F.	M.	F.	T.	M.	F.	T.		
In the State Institution -	253	340	435	153	7	8	695	501	1,196	-	-	695	501	1,196
In Certified Institutions -	7,390	9,233	1,737	460	954	581	10,081	10,274	20,355	1,000	1,138	11,081	11,412	22,493
In Approved (sec. 37) Institutions -	3,613	4,562	514	123	39	29	4,166	4,714	8,880	-	-	4,166	4,714	8,880
In Certified Houses -	2	9	-	-	92	112	94	121	215	-	11	94	132	226
In Approved Homes -	-	-	-	-	-	-	-	-	-	308	256	308	256	564
Under Guardianship or Notified -	1,163	1,369	-	-	16	10	1,179	1,379	2,558	106*	135*	1,285	1,514	2,799
Total -	12,421	15,513	2,686	736	1,108	740	16,215	16,989	33,204 ^(a)	1,414	1,540	17,629	18,529	36,158†

(a) Of these cases approximately 1,592 were on Licence from Certified Institutions and 61 from Guardianship.

* Notified cases (sec. 51).

† In addition to the patients in Institutions and under Guardianship, there were on the same date 29,735 patients (15,715 males, 14,020 females) under Statutory Supervision (sec. 30 (b)).

8. STATE INSTITUTION.*

(1) Rampton.

We have received the following report from Dr. Schneider, who took up his duties as Medical Superintendent on 19th April, 1932 :—

During the year 1932 there has been a net increase of 72 in the number of patients resident. There have been 75 male and 56 female patients admitted during the year; these figures include 11 juvenile males and 9 juvenile females. Thirty males and 12 females were admitted immediately following certification.

	Men	Women	Boys	Girls	Total
Numbers on 1st January, 1932 ...	601	393	35	24	1,053
<i>Add :—</i>					
Admissions during year ...	64	47	11	9	131
Re-admissions during year...	13	3	—	3	19
Recaptures during year ...	20	5	—	—	25
	698	448	46	36	1,228
<i>Deduct :—</i>					
Licence during year ...	14	4	1	3	22
Escapes during year ...	21	5	—	—	26
Discharges and transfers ...	16	18	3	—	37
To adult section ...	—	—	6	1	7
Died ...	2	5	—	4	11
	53	32	10	8	103
Numbers on 31st December, 1932...	645	416	36	28	1,125

The following table shows the type of institution or place from which these patients were received.

	Males.	Females.
Certified Institutions ...	29	22
Institutions under Sec. 37 ...	15	10
Warwick branch ...	—	12
Prisons ...	8	—
Courts of Sum. Jur. :—Sec. 8 ...	2	—
Borstal Institutions...	1	—
Mental Hospitals ...	4	4
Places of Safety ...	4	2
Discharged and re-admitted same day ...	3	—
Guardianship ...	2	—
Own Home ...	7	4
Special School ...	—	1
Children's Act, Sec. 9 ...	—	1
Total Admissions ...	75	56

* An institution for defectives of dangerous or violent propensities established and maintained by the Board of Control under the provisions of section 35.

Admissions.—Amongst both males and females a larger number of patients have come to us from Certified Institutions than from any other place (29 out of 75 males, and 22 out of 56 females). The total number of admissions shows an increase of one compared with last year's figures.

Ten male patients were admitted from prisons and one from a Borstal institution.

The mental classification of the admissions was feeble-minded, 96; imbecile and idiot, 31; moral defective, 4.

Discharges and Transfers.—The numbers of patients discharged or transferred were 27 males and 22 females. Certified Institutions appear to be the most important destination for males, 10 being so dealt with; and Warwick State Institution received 15 of the females.

Licence.—There were on 31st December, 1932, 10 males and 2 females on licence to their own homes; 1 male on licence to a public assistance institution; 1 female to a certified institution; 1 male to a farm; and 2 females in service.

Section 16.—Six male and 3 female patients were in Mental Hospitals (Section 16) on 31st December, 1932.

Absconders.—Twenty-one males and 5 females absconded during this year. The total figure of 26 is 4 less than last year, and 3 less than the year before.

Deaths.—There have been 11 deaths (2 males and 9 females), the causes of death being heart disease, 5; encephalitis lethargica, 3; tuberculosis, 1; status epilepticus, 1; and Vincent's angina, 1. The death rate was 10 per 1,000 resident.

General Health.—The physical health of our patients has remained at a high level and there have been no serious epidemics. No cases of serious infectious disease such as typhoid, dysentery or the infectious fevers have occurred.

Many patients have been examined and treated by the visiting consultants in General Medicine, Eye and Ear, Nose and Throat. The visiting dentist has attended weekly, and the patients appreciate the benefit of the dental treatment they receive.

Occupation.—In addition to the work already being done in the grounds and gardens, the male patients have undertaken the construction of several ash-covered roads in the kitchen garden, where the ground was still rough. This means that the area concerned is now cut up into smaller plots which will be more easily cultivated than was formerly possible. A great amount of work has been done, too, on the levelling, draining and preparation of the new cricket ground.

The workshops continue their activities. There is always a large demand in the institution for their products. The metal-worker's shop now copes not only with the repair, but also with the construction of many of the kitchen utensils. The boys in this shop have even succeeded in repairing gramophones and typewriters.

The female patients, as is to be expected, find their happiest sphere of usefulness in domestic work and in sewing and fancy needlework. The high standard of this last is clearly indicated by the great demand for it; there are at all times orders to be executed in such numbers as to keep the patients in these workshops fully engaged.

The low-grade adult female class has received much attention; and these patients, though their response to training is in the nature of things slow, have shown considerable improvement. The patience and enthusiasm of the staff in dealing with this class is most gratifying.

Several female patients are employed, under the supervision of the Poultry Mistress, on the poultry farm. Others again have been engaged in light garden work.

Boy Scouts and Girl Guides.—The Boy Scout Troop is now famous in the district for its smartness and efficiency. We have a full troop of 4 patrols of 6 scouts each; there are always many patients eager to join, so that it is possible to demand a high standard of behaviour in candidates for the honour of joining the Troop. The lads are steadily advancing in their grasp and appreciation of the true spirit of scouting, and this cannot fail to improve their general conduct.

The Guides are not far behind the Scouts. We have only 2 patrols (12 girls) so far, but they make up in keenness for what they lack in numbers. Country dancing has come naturally to them, and in a competition in the neighbourhood they obtained a diploma with second-class honours.

Staff.—Eleven male and 12 female nurses passed the final examination in the Nursing of the Mentally Defective during 1932, and one man passed with distinction. Thirteen male and 7 female nurses passed the preliminary examination. The total number of nurses now holding the Royal Medico-Psychological Association's Final Certificate is 101 men and 33 women. These figures, of course, do not include the Matron, Assistant Matron, Head Attendant or Deputy Head Attendant.

The participation in sport has been conspicuous. Cricket, tennis, swimming and hockey have provided excellent recreation for staff of both sexes, while the football team distinguished themselves by winning the Civil Service Cup.

The general health of the staff has been good.

The staff have been loyal and cheerful in their support of me, and zealous and painstaking in their care of the patients. For these things I thank them.

(2) Warwick branch.

The following is a brief report on the work of the year at the Warwick branch of the State Institution:—

Number of patients—1st January, 1933:

In residence	43
On licence	9
In daily service from Hostel	7
Admissions during 1932	15
Discharged	1
Absconded and returned	3
Deaths	1
Transferred:	
To Rampton	12
To certified institutions	2
To guardianship of mother	1
Granted Licence:	
To situations (domestic service)	4
To parents and relations	4
To Public Assistance Institutions (holiday leave)	1
To friends (holiday leave)	1
Holiday leave for hostel patients:	
To parents and relations	4
To Seaford	7

The Warwick branch of the State Institution will be closed down before this Report is issued and the patients transferred either to Rampton or to the new branch that is being opened at Moss Side.

The conditions under which the work has been carried on since 1923 in part of the old prison buildings were difficult and depressing, and the loss of the branch as a whole leaves little cause for regret. But in spite

of the surroundings an atmosphere was created in the branch at Warwick that was far from prison-like and, owing to the excellent work of the staff and to the co-operative sympathy roused in the neighbourhood, this branch of the State Institution has filled an important part in the care and training of some of the girls from Rampton.

The feature of the work peculiar to Warwick has been the hostel established in the Chaplain's house in 1924 from which girls went out to daily work and later to situations on licence.

Figures taken over a period of five years ending 31st December, 1931, showed that 21 girls went out to paid daily service, and 15 were in paid living-in service on licence during that period; 14 girls were away on licence with relatives or friends or were on trial in other institutions; 14 were sufficiently stabilised to be transferred to other institutions; 4 were discharged, and in two cases the orders lapsed.

These figures may perhaps appear insignificant in comparison with the total numbers in the State Institution, but it must be remembered that all admissions to Warwick have proved violent and dangerous to such a degree as to be unmanageable not only in the community, but in other institutions. Moreover, as soon as a girl becomes sufficiently stabilized she is transferred to the care of the responsible Local Authority. We are dealing therefore only with girls who are still unfit for transfer, and the experiment of re-establishing them in the community involved special difficulties and had to be made with the greatest care and under the direction of persons with an intimate knowledge of the individual girls. It is unlikely, we believe, that the same results could have been attained without the familiar care, supervision and control that were available for the girls working in the hostel or on licence within reach of Warwick. This is shown by the amount of time spent by the Matron in supervising the girls who were out at work and in visiting their mistresses. Constant vigilance and an intimate knowledge of the girls were required to minimise the risk of disaster and unnecessary failure, as it is at this critical period of their career that continuity of care appears to be most needed.

We believe that the atmosphere amongst the higher grade girls in the institution depends largely upon their realising that everything possible is being done to enable them to live more normal lives in the future. The hostel provides a proof of this aim in a concrete form. Even if the girls fail most of them have enough sense of justice to realise that they have been given a fair chance, and the spirit of greater contentment and of co-operation with those in authority is very marked.

From the point of view of the hostel, therefore, we regret leaving Warwick, where the connection with mistresses in the neighbourhood built up by the first Matron, Mrs. Newsome, and maintained by Miss Bagley, the Acting Matron, will be hard to replace. A small hostel will, however, be opened at Moss Side, which it is hoped in time will give to selected girls an equally good chance of re-establishing themselves in more independent and normal conditions.

9. CERTIFIED INSTITUTIONS.*

On 1st January, 1933, there were 121 certified institutions with certified accommodation for 21,919 cases under the Mental Deficiency Acts.

Admissions.—The admissions during 1932 numbered 4,141, a decrease of 21 on the number admitted during 1931. The sex distribution per cent. of the admissions was: males, 48·9; females, 51·1. There were, on 1st January, 3,480 patients

* A Certified Institution is one certified by the Board of Control under section 36 for the reception of defectives.

awaiting removal to institutions, an increase during the year of 628.

Discharges.—The patients discharged or transferred during the year numbered 1,381, an increase of 224 on the number removed during 1931. Only 192 of these cases were absolute discharges of cases dealt with under the Mental Deficiency Acts. The discharges and transfers were 6·5 per cent. of the average number of patients resident.

Deaths.—These during 1932 numbered 231, being 1·1 per cent. of the average number of patients resident, as compared with 1·3 per cent. in 1931 and 1·1 per cent. in 1930. The deaths from tuberculosis (all forms) numbered 43, 18·6 per cent. of the total, and those from pneumonia numbered 40 (17·3 per cent.).

Under Care on 1st January, 1933. The changes during 1932 detailed above—admissions, discharges and deaths—resulted in a population of 22,493 in certified institutions on 1st January, 1933, an increase of 2,529 during the year. The distribution of these cases—according to the conditions under which they were received—was as follows:—

	Males.	Females.	Total.
Received under the provisions of the Mental Deficiency Acts - - - - -	10,081	10,274	20,355
Received outside the provisions of the Mental Deficiency Acts:—			
Sent by Local Education Authorities -	707	463	1,170
Sent under the Children and Young Persons Acts, 1908 to 1932 - -	38	50	88
Sent by Poor Law Authorities - -	230	479	709
Sent by Relatives or others - -	25	146	171
Total - - - - -	11,081	11,412	22,493

The proportion of patients in certified institutions who are received under the provisions of the Mental Deficiency Acts, as compared with the proportion received outside the Acts, is steadily increasing, as is shown by the following table:—

Year. (1st Jan.)	Under the provisions of the Acts.	Outside the Acts.	Total.	Percentage under the Acts.
1918	4,242	2,147	6,389	66·4
1923	7,891	2,126	10,017	78·8
1928	12,197	1,902	14,099	86·5
1931	15,457	1,743	17,200	89·9
1932	17,965	1,999	19,964	90·0
1933	20,355	2,138	22,493	90·5

10. CERTIFIED HOUSES.*

On 1st January, 1933, there were 226 persons under care in certified houses—admitted under the following conditions:—

—	Males.	Females.	Total.
Received under the provisions of the Mental Deficiency Acts - - - - -	94	121	215
Received outside the provisions of the Mental Deficiency Acts:—			
Sent by Poor Law Authorities - -	—	9	9
Sent by Relatives or others - -	—	2	2
Total - - - - -	94	132	226

The above figures show an increase of 15 patients in these houses during the year. All the cases received under the Mental Deficiency Acts (except 11 cases under Order) were “placed” under section 3.

11. APPROVED HOMES.†

Number of Patients on 1st January, 1933.

—	Males.	Females.	Total.
Sent by Poor Law Authorities -	53	59	112
Sent by Local Authorities - -	37	23	60
Sent by Relatives or others - -	218	174	392
Total - - - - -	308	256	564

On 1st January, 1933, there were 38 of these homes in existence, with total accommodation for 744 patients, and the numbers under care showed an increase of 4 on the preceding year.

* A Certified House is one in which defectives are received by the owner thereof for his private profit, and in respect of which a certificate has been granted by the Board of Control under section 49.

† An Approved Home is one in which defectives are received and supported wholly or partly by voluntary contributions or for private profit, and in respect of which approval has been granted by the Board of Control under section 50.

12. DEFECTIVES UNDER GUARDIANSHIP AND IN PRIVATE CARE.

The following table shows the changes that have taken place during the past year among the mentally defective patients residing under guardianship and in private care :—

—						Males.	Females.	Total
Number on 1st January, 1932—								
Under Order	-	-	-	-	-	1,012	1,157	2,169
“Placed” (section 3)	-	-	-	-	-	18	12	30
Notified (section 51)	-	-	-	-	-	126	147	273
						1,156	1,316	2,472
						M.	F.	Total.
Admissions (including cases admitted from institutional care) - - -						233	321	554
Discharges (including removals to institutions under Varying Order) -						86	97	183
Deaths - - -						18	26	44
Number on 1st January, 1933—								
Under Order	-	-	-	-	-	1,163	1,369	2,532
“Placed” (section 3)	-	-	-	-	-	16	10	26
Notified (section 51)	-	-	-	-	-	106	135	241
Total - - -						1,285	1,514	2,799

As compared with the previous year, there was an increase of 363 in the cases under Order, and decreases of 4 and 32 in the “placed” and “notified” cases respectively, making a total net increase for the year of 327.

13. MENTAL DEFECTIVES IN PUBLIC ASSISTANCE INSTITUTIONS AND PUBLIC HEALTH HOSPITALS.*

The number of defectives dealt with under the Mental Deficiency Acts who were in Public Assistance Institutions and Public Health Hospitals, approved under section 37, on 1st January, 1933, is shown in the subjoined table :—

—					Males.	Females.	Total.
Under Orders	-	-	-	-	4,127	4,685	8,812
“Placed” (section 3)	-	-	-	-	39	29	68
Total - - -					4,166	4,714	8,880

* The numbers of persons of unsound mind in Public Assistance Institutions and Public Health Hospitals will be found on p. 42.

These 8,880 patients were distributed as follows:—

(a) In Public Assistance Institutions	...	...	...	4,843
(b) In special London Public Assistance Institutions —Darenth, Caterham, Leavesden, Fountain— (formerly the Metropolitan Asylums Board Certified Institution)	...	...	...	4,037

14. CENTRAL ASSOCIATION FOR MENTAL WELFARE.

During 1932 a total number of 743 cases were referred to the Association for help and advice. Of this number 140 were passed on directly to Local Associations, to the Mental After-Care Association or to other social organizations. The remainder were dealt with by the Central Association's case department. Advice concerning procedure has been given, medical examinations with consultants and clinics have been arranged and vacancies have been found in Homes. Assistance has also been given both to families needing nurses and governesses, and to trained nurses and governesses needing posts with sub-normal children.

A new development in 1932 was the Holiday Home for defectives at Littlehampton. The experiment was a success, and over 340 defectives were received at the hostel, most of them for a period of a fortnight each. The Home has again been reserved for four months in 1933.

The Guardianship department has extended its work. At the end of the year there were 164 cases placed out under the care of the Association, and placings were being made at an average rate of one per week.

The Association has continued to organize the training of defectives living at home in the county of Middlesex, and by December, 1932, a total number of 356 children were being taught either in the centres or at home.

During 1932 the six full-time centres at Ealing, Edmonton, Hendon, Hounslow, Willesden and Wood Green continued, together with the craft class for boys at Wood Green and the handicraft classes for elder girls under a travelling teacher. There are also four full-time home teachers, whose time is fully occupied by visits to 132 children.

The occupational organizer visited four institutions, one mental hospital, one private case and undertook some home teaching and lecturing.

The organizer of work in new areas devoted herself during the first part of 1932 to extending guardianship in rural areas, and to placing boys and men on the land. At the same time she did a certain amount of work in Northampton and Nottinghamshire.

Training courses were held in 1932, and though they suffered slightly owing to the economy restrictions, were again well attended. Courses were held as follows :—

Medical Officers' course. Part I (50 students), Part II (30 students).

Eight weeks' course for teachers (15 students).

Three weeks' courses for teachers :—Birmingham (elementary), 50 students ; London (advanced), 38 students.

Enquiry officers and supervisors' course (15 students).

In addition, individual social workers have been given training at the Association offices and in the occupation centres. A group of students attending the London School of Economics Mental Health Course were given practical training in mental deficiency work by the Association. Visits and tours were arranged for visitors from other countries and from various parts of England.

Two scholarships were awarded from the Margaret Macdowall Trust Fund to enable women to attend short courses.

The Biennial Conference was held in British Medical Association House on 1st and 2nd December, 1932, and was attended by about 300 delegates from Local Authorities and Social Organizations. The Conference was opened by the Minister of Health ; one session was held jointly with the British Social Hygiene Council.

III. GENERAL.

1. PROSECUTIONS.

The following prosecutions undertaken on our Order resulted in convictions :—

R. v. William Charles Jenkins.—The defendant, who at the date of the alleged offence was a male nurse at Northumberland House, a place licensed for the reception of persons of unsound mind, was on 17th November, 1932, charged at the North London Police Court with assisting a patient to escape therefrom on 11th July, 1932, contrary to the provisions of Section 323 of the Lunacy Act, 1890. He was fined £5 5s. and ordered to pay £5 costs.

R. v. William Pilbeam.—The defendant, who at the date of the alleged offence was a male nurse at Ticehurst House, a place licensed for the reception of persons of unsound mind, was on 29th December, 1932, charged under section 323 of the Lunacy Act, 1890, with assisting a patient to escape therefrom on 31st August, 1925. He was fined £20.

A prosecution under the Mental Deficiency Act, 1913, resulted in conviction :—

R. v. Thomas Wilson.—The defendant was charged at the Carlisle City Police Court on 21st November, 1932, with having assisted a mental defective patient on licence from Prudhoe Hall Colony, a certified institution under the Mental Deficiency Act, 1913, to break the conditions of his licence, contrary to the provisions of section 53 of the said Act. He was fined £2, inclusive of costs.

2. SUICIDES AND OTHER FATAL CASUALTIES.

Suicides.

The table below gives the number of patients under statutory care who committed suicide during the year.

For clearness of presentation the numbers are set out in columns showing whether the act resulting in death had taken place during the period of residence in the hospital or whether it occurred before admission or while the patient was on leave from hospital care.

	The suicidal act committed :—		
	Before admission.	Whilst under care (including escapes).	Whilst on leave or trial.
<i>Certified Patients :</i>			
County and Borough Mental Hospitals	10	17	11
Registered Hospitals	—	2	—
Single-Care	—	3	—
<i>Temporary Patients :</i>			
County and Borough Mental Hospitals	—	1	—
<i>Voluntary Patients :</i>			
County and Borough Mental Hospitals	—	4	1
Registered Hospitals	1	2	—
Metropolitan Licensed Houses	—	1	—
Provincial Licensed Houses	—	1	—
Total	11	31	12

There have been no suicides in institutions for mentally defective patients.

It will be seen that, exclusive of 11 cases where the act was committed before admission, 43 patients have died by their own hands. This figure compares with 44 for the previous year.

The precautions which are taken to prevent such events have reduced the chances to small measure, but it is assumed that such impulse of the patient cannot always be known and anticipated.

A time comes when the medical officer must grant relaxation on the evidence of real improvement; and though from the occurrences we are discussing it is seen there is the danger of an overpowering impulse returning to the mind and giving rise to action before it can be anticipated, we should not from this infer the necessity for taking an ultra-cautious attitude which would react to the evident disadvantage of so many patients who go on to recovery without interruption or relapse.

To maintain close observation with perhaps restriction of movement for long periods after apparent recovery may create misapprehension as to the real need of the special measures taken to protect suicidal cases, and may create in the mind of the nurse a tendency to rely on her own judgment rather than on the discretion of the doctor in charge of the case.

It is necessary to the better nursing of cases of this type to relieve those in immediate contact with the patient of the responsibility for determining from moment to moment the thoughts and propensities which may result in self-destruction,

the artifices adopted by those in such urgent mental stress are so likely to deceive that the nurse must surely be protected by the more detached judgment of some officer of greater knowledge and experience.

In the following table the suicides during the year are set out according to the method adopted.

Form of Suicide.	Number.
Solid or liquid poisons and corrosive substances... ..	4
Poisonous gas	1
Hanging or strangulation	16
Drowning: actual and attempted	11
Firearms	1
Cut throat	11
Multiple punctured wounds	1
Burns	1
Jumping from high places	2
On railway	3
Swallowing foreign bodies	2
Eating yew leaves	1
Total	54

We give now some particulars which may be of interest to those who have the care of patients suffering from mental illness.

G. N., a male patient, admitted on 24th June, 1932, to the South Yorkshire Mental Hospital, Sheffield, died therein from collapse of the lung and haemothorax, the condition being the result of wounds self-inflicted with a penknife before admission. He was very ill when received at the hospital and it is recorded that he had scars on his neck and chest, behind both knees, at the root of the penis and had septic wounds across both wrists, all being due to self injury.

Such multiple injuries are comparatively rare and are reminiscent of the fanaticism of religious ecstasy.

A. M., a woman, admitted 3rd January, 1932, whose death occurred at Severalls Mental Hospital, Colchester, from septic pneumonia and injury to the gullet and trachea, had before admission after an unsuccessful attempt to swallow a dinner knife succeeded with a dessert knife $8\frac{1}{2}$ inches long; the latter was removed from the stomach. There had been, however, severe injury to the upper part of the gullet.

N. P., a male patient, admitted to the County Mental Hospital, Whittingham, Lancashire, on 29th May, 1926, committed suicide in the bathroom in which he worked. There was no history of suicidal tendencies prior to admission, and at no time during his six years at the hospital had he expressed any desire to injure himself. There had been no recent alteration in his state of mind. The point of special interest is that he hanged himself with a stocking, one end of which was attached to a hot-water pipe only $3\frac{1}{2}$ feet from the ground. He was found in a sitting position with his feet on the floor.

E. E. B., a woman, admitted to Severalls Mental Hospital, Colchester, on 17th December, 1925, died from valvular heart disease, to which is cited as a contributory cause obstruction of the larynx by a foreign body. She got up to wash in the morning and had returned to bed when the nurse saw that she was blue and distressed. Investigation revealed a piece of

lint, used as a face cloth, at the back of the throat. Though it was quickly removed the patient did not recover.

F. M., a woman, admitted to Springfield Mental Hospital on 15th June, 1923, died during 1932 from poisoning as the result of eating yew leaves obtained in the grounds of the hospital. Two yew trees in the ward garden had been growing there for thirty years, but in consequence of the unhappy result of this incident the trees have been destroyed. This means of committing suicide had possibly been suggested by a death (S. P. B.) occurring a fortnight earlier at the Maudsley Hospital, when a male patient died as the result of eating the leaves of a similar tree. Excluding these two cases there have been 11 deaths from this cause in mental hospitals spread over the past fifty-six years.

Fatal Casualties.

Amongst the deaths from misadventure, in addition to the case of S. P. B.; referred to above (Maudsley Hospital, admitted 31st May, 1932), the following cases have points of interest.

A. S., a female patient, admitted to Banstead Mental Hospital on 2nd August, 1929: during bathing, a nurse on duty in the bathroom found her sitting in a bath in which there was a little very hot water. The patient sustained burns on her feet and buttocks which condition was associated with pleurisy and broncho-pneumonia the cause of her death three weeks later. The mixing apparatus which was subject to overhaul every three months, with an external examination weekly, was tested after the accident, when the water came through normally. But on examination, the valve concerned was found to have a broken spring. The old valves have now been replaced by another type of hot and cold water blender.

E. E., a woman, admitted on 5th December, 1923, to the Lancashire County Mental Hospital, Winwick, died of broncho-pneumonia. A piece of coal, 1 inch square and $\frac{3}{4}$ inch deep, was found about 5 inches down from the back of the mouth, embedded in the gullet and windpipe, having passed through the gullet into the windpipe by causing ulceration of the walls of both tubes.

M. K., a male patient at Colney Hatch Mental Hospital (admitted 14th March, 1912) died under the following circumstances.

While he was returning with others from the garden to the ward he had words with another patient; as a consequence there was a scuffle. Blows were exchanged and the deceased, though the aggressor, was overpowered and fell to the floor. Whereupon the other man, before the male nurses on the spot could intervene, kicked him several times about the body. There was no further struggle. As the patient appeared to be suffering from severe shock he was put to bed and examined, but it was not until some hours later it became evident that he was suffering from some abdominal condition calling for surgical treatment.

The consulting surgeon found that the lower part of the small intestine had ruptured in three places, permitting the escape of the contents into the abdominal cavity. Death appears to have resulted from peritonitis.

3. ALLEGATIONS OF ILL-TREATMENT.

F. C. L., a rate-aided certified patient, 30 years of age, was admitted on 1st January, 1932, to the Middlesex (Napsbury) Mental Hospital. Complaints having been received regarding the treatment of this patient, including serious allegations of ill-usage, delay in the diagnosis of a fractured lower jaw, and negligence on the part of the medical staff of the hospital, we

decided to hold a sworn enquiry at the hospital into all the circumstances.

The enquiry was held at the hospital on 7th and 9th March, 1932, by two Commissioners, and was attended by representatives of the Visiting Committee of the hospital, and by Counsel on their behalf, while the patient's mother and the Mental Hospital and Institutional Workers' Union were each legally represented. The mother and brother of the patient were also present.

The enquiry was particularly directed to the following points :—

(1) How and in what circumstances did the patient sustain a fractured lower jaw ?

(2) Was there any undue or improper delay in diagnosing the injury ; in fact, was there any negligence on the part of the medical staff in their treatment of the patient ?

(3) Was the injury due to any improper conduct on the part of any one or more of the hospital staff ?

The two Commissioners first visited the patient and had a talk with him, no one else being present, and then proceeded to take the evidence of 20 witnesses, all of whom, with the exception of two certified patients, were sworn. Before concluding their enquiry the Commissioners asked all parties whether there was any other person they would like them to examine, and all agreed there was not.

The Commissioners reported that, although they regretted that they were unable to say positively when and how the injury to the patient took place, they had come to the following conclusions :—

(1) That the patient, owing to his great strength, was quite unusually difficult to restrain and to handle.

(2) That the injury probably occurred accidentally in the course of restraining the patient on 31st January before, during or immediately after feeding by oesophageal tube ; and probably not from a blow or kick but from lateral pressure of knee or hand.

(3) That having regard to the comparative frequency with which, in some mental hospitals, surgical measures are employed during acute phases of mental illness, they felt some difficulty in accepting the opinion that, even had it been desired to administer an anaesthetic, the procedure would have been neither safe nor even possible. They preferred to accept Dr. Stern's reason for not doing so : namely, that, seeing the patient apparently eating without difficulty, he was confirmed in his opinion that there was no fracture, and that therefore he did not want to use an anaesthetic which might have been difficult to administer and again upset the patient. They were not able to verify the statements of the patient's mother that from time to time she drew the attention of the medical staff to the probability of a fracture of the patient's jaw.

(4) That the uncorroborated evidence of, and the different accounts given by, the patient cannot be relied on and that there was, therefore, no evidence to show that any of the staff were guilty of cruelty or of using more force than was necessary adequately to deal with a very difficult patient.

(5) They thought that a determined attempt by the patient to escape on the early morning of 10th February should have been at once reported to a medical officer, and also the reason he gave to a night nurse for his attempt, namely, to get treatment for his fractured jaw.

They thought, moreover, that the instructions to the night staff as to what they should do in unusual circumstances should be more explicit than they appear to be at present.

They much sympathized with the patient's mother in her trouble and were glad that she was able to speak in generous terms of the hospital staff. She stated that except for her complaints about her son's injury she had no cause for complaint.

4. REVISED COSTING RETURNS.

With a view to obtaining costing returns, on a comparable basis, for the different types of residential institutions administered by Local Authorities, the costing returns hitherto rendered to the Board annually in respect of County and Borough Mental Hospitals and of Certified Institutions established and maintained by Local Authorities (alone or in combination) under the Mental Deficiency Acts have been revised to correspond, with the necessary adaptations, with the costing returns now obtained by the Ministry of Health for institutional poor relief, the residential treatment of tuberculosis, maternity hospitals and homes, and general hospitals respectively.

The form of the new returns was settled after joint consultation by the Board and the Ministry with the Mental Hospitals Association and certain representative Local Authorities, and with the Incorporated Association of Clerks and Stewards of Mental Hospitals, the Institute of Municipal Treasurers and Accountants (Incorporated), and the County Accountants' Society.

In order to assist in securing uniformity of accounting method, the three last-mentioned bodies have prepared and issued a Joint Memorandum on Mental Hospital Accounts, based on the new form; and they are also preparing a similar exemplification of the accounts of "Local Authority" institutions under the Mental Deficiency Acts.

The revised form of return will apply as from 1st April, 1932—or from 1st April, 1933, in the case of a relatively small number of Mental Hospitals where it was not found practicable to make the change to the new system at the earlier date.

The Financial Officer who renders the return to the Board will also supply a copy to the Local Authority (or each Local Authority) to whom the Mental Hospital or Certified Institution belongs.

When the returns in the new forms for the financial year ending 31st March, 1933, have been received, and annually thereafter, the Board will compile and circulate comparative statements showing respectively the average weekly cost per patient for each Mental Hospital or Certified Institution.

5. NOMENCLATURE.

The present schedule of forms of Mental Disorder was drawn up by a committee of experts nearly thirty years ago. It was adopted by the Commissioners in Lunacy in 1907 for the purpose of the medical and other statutory registers kept at the institutions, and for the annual returns made to their office. More strictly speaking, it should be styled a schedule of forms of Unsoundness of Mind or of Mental Abnormalities, because it includes mental deficiency at least in its statutory divisions, as well as mental disorders. Admittedly it is in urgent need of revision: in order, in the first place, to broaden its scope so as to permit the inclusion within it of the psychoneuroses, in the absence of which it is difficult and sometimes impossible to assign a diagnosis for some of the voluntary patients who now seek admission to mental hospitals; and secondly, to harmonize some of the terms with modern usage. We are therefore glad to know that a committee of members of the Royal Medico-Psychological Association has the matter in hand. We fully realize the complexity of the subject and the difficulty of reconciling different views. In the present state of medical knowledge it is not possible to frame a nomenclature based upon either pathology or causation. In view of the importance of collecting international statistics, the need for which was once more urged last year at the Paris conference of the International Council of Mental Hygiene, we hope it will be possible to agree on some system, which, without necessarily being in all respects identical with that adopted by the more important European countries, will at least permit of statistics being compiled on a comparable basis. International co-operation inevitably involves compromise and concessions; but we feel so strongly the need for at least a measure of agreement, that we hope the Committee will make every effort to harmonize their views with those of their continental and American colleagues, even at the cost of adopting a classification which may be less ideally satisfactory than a merely national system.

6. RESEARCH.

Sixty-four communications have been received from the following sources: 51 of the 99 County and Borough Mental Hospitals, the Central (London County) Laboratory, and the Maudsley Hospital, four of the 13 Registered Hospitals and seven Institutions for Mental Defectives. These numbers correspond closely with those of the previous year.

Routine Laboratory Work.—Summaries have been received from 57 of the reporting institutions, of which six are for mental defectives and four are registered hospitals. In a large number, work under this heading has reached considerable dimensions. Two new laboratories have been opened, one at Salop Mental Hospital and the other at Newport (Isle of Wight).

Chronic Infective Processes (Septic foci, etc.)—At Birmingham 1,245 cases of sinus disease have now been investigated by the suction exploration method. Experience demonstrates the desirability of including all sinuses (sphenoidal, ethmoidal, antral) in the examination. Positive clinical evidence of sinus disease was present in 1,001 cases (which figure, it is stated, would be much higher were cultural bacteriological evidence taken into account). In 724 of this number, two or more sinuses were involved. An examination of the ophthalmic condition in 219 selected cases by the visiting Ophthalmologist was correlated, in respect of 111, with Wassermann tests and the presence of focal sepsis. Eighty of the 111 showed pupillary, retinal, vascular and optic nerve lesions. In 79 of these there was evidence of sepsis in the neighbourhood of the nose and mouth. It is to be gathered that a positive Wassermann was found only in a minority of cases. Some other factor than syphilis appears to be necessary to explain the eye-lesions. Whether that was sepsis remains to be proved. The need for further ophthalmological investigation in psychotic patients seems clear. Also at Birmingham 50 influenzal carriers, not ill at the time, were examined for *b. Pfeiffer* in the tonsils, nasal passages and sinuses. Forty of these had been in residence for one year or less, ten for longer periods. The organism was found in one or more of these sites in a number of cases; as regards the sinuses, in 37. It was found commonly as a mixed infection. The time incidence did not correspond with the usual period of epidemic influenza. The investigation is regarded as supporting the commonly held opinion of the special neuro-toxic action of *b. Pfeiffer*. How far it is permissible to regard an individual as an influenzal carrier because he carries *b. Pfeiffer* which may not be the real causative agent but an organism in symbiosis with an invisible virus which is causative, and whether indeed *b. Pfeiffer* possesses a "neuro-toxic"* action, are probably matters of opinion in need of scientific proof.

At St. Andrew's (Northampton), in all cases (42) in which it was feasible, a stereoscopic examination of the nasal sinuses was made. In only one was latent disease detected. At Cardiff, where the incidence of chronic nasal sinusitis and tonsillitis has been investigated in all new admissions, the findings are largely confirmatory of those of the two preceding years. These findings are to be published shortly. The experience of this hospital is that nasal sinusitis is found in only a small percentage of cases, but most of these benefit from clearing up the conditions. Nasal sinuses examined at autopsy by Pickworth's method in 11 cases were not found to be diseased.

At Horton a microscopic examination of various regions of the alimentary tract is being made with a view to substantiating

* *Klin. Myer, K., Wochenschrift.* February 25th, 1933.

work on dementia praecox by foreign writers. Prominent amongst these, we recall, is Buscaino* who long since emphasized the need for both macroscopic and microscopic examination of the small intestine, in the walls of which he has described naked-eye and microscopic lesions of a marked nature in dementia praecox and some other conditions. Perhaps the small intestine especially escapes critical routine macroscopic examination at autopsy in mental hospitals: a post-mortem record always should make it quite clear whether, in fact, the gut has been opened up.

Dysentery, Enteric, etc.—Reports have been received from 16 institutions, five on dysentery, three on enteric and eight on both.

Professor Shaw Bolton's (Wakefield) Fourteenth Post-War Report on Asylum Dysentery and Allied Infections states that only two cases of enteric occurred during the past year and only one new carrier was detected. There appear to have been only 5 carriers in the large population concerned. Widal tests are continued, for typhoid and dysentery, on all probationers on the staff and all new admissions. At Whittingham, similar tests on every new admission are done. At Bristol prophylactic inoculation of all patients against dysentery has been continued; 271 new admissions have received this; only one case of the disease has occurred: the relatively low incidence of dysentery since the adoption of this treatment in 1929 is commented on. At Cheddleton the whole hospital excepting one ward has been inoculated with a sensitized anti-dysentery vaccine: this is to be repeated and results observed. From Caterham, in reference to *Diphtheria*, it is reported that, whilst prophylactic inoculation with diphtheria anti-toxin is valuable as a quick method of immunization and checking an outbreak, it does not prevent recurrence after the lapse of three months.

General Paralysis.—Reports have been received from 16 institutions, 17 communications. At Menston (West Riding), pyrifera, a vaccine of the colon bacillus, has been given in five cases. These were not of a hopeful type, but further cases will be treated on the basis of this experience. Good febrile reactions and a marked leucocytosis, with a decided "shift to the left" (Arneth) were observed. The physical condition remains remarkably constant, claimed as an advantage over malarial therapy. At Whittingham the mode of action of various pyreto-therapeutic agents is being examined, with special reference to the Arneth count and histological changes in the blood-forming organs. With regard to malarial inoculation, some very interesting information is given upon the basis of the examination of 230 cases so treated. The subsequent history of these for some years is known, and a statement of expectation of life is based upon this information. Twenty-two per cent. of the cases treated nine years ago are still living. Of the 10 conclusions which the report contains we

* *Riv. pat. nerv. e ment.* 28.437.1923.

refer to two, namely (1) that reinoculation with malaria has not been of special benefit and (2) that malarial treatment has little or no effect on physical signs present in the nervous system. These conclusions are probably in accordance with the general experience of observers; but, as regards the value of second or subsequent inoculations with malaria, occasional benefit has been reported by other observers. The practice has been advocated by Wagner-Jauregg himself and may depend on such features as the duration of the disease or the length and intensity of the fever resulting from the first inoculation.

From Horton a report has been published* upon 200 cases of malarial treatment since 1925. In the return made to the Board, it is stated that recovery-rates are much higher in grandiose, maniacal, and in depressed cases than in the dementing form; that the good remissions are those that are discharged 7 to 9 months after treatment was commenced; that quartan malaria is suitable for the older and more debilitated types and is useful for those immune to benign tertian. By using different strains of parasite a second course of malaria, quite as severe as the first, can be produced, but mental improvement is not influenced thereby. The experience of many, that there does not appear to be any correlation between the serological reaction (c.s.f.) and the clinical result is confirmed. The biological process by which the malarial parasite brings about favourable results in general paralysis, and why that process is, as we believe is generally held, superior in its effects to artificial means of producing reaction and pyrexia, would seem eminently a subject of investigation in mental hospital laboratories.

Pyreto-therapy.—Brief statements regarding the use of preparations of sulphur and T.A.B. vaccine, chiefly in cases of schizophrenia, have been sent from seven institutions: at Nottingham City sulfosin was used in two cases of agitated melancholia, without improvement. From Birmingham it is stated that colloidal sulphur (1 per cent.), when the vehicle is distilled water, has advantages over oily preparations: that amongst these advantages there is less local reaction and on the whole less pain. We believe that the prevailing opinion, in this and other countries, is that sulphur treatment is not encouraging in schizophrenia. The amelioration and cure occasionally brought about by intercurrent disease, whether systemic or a severe local inflammatory condition, in psychoses cannot, it seems, even yet be artificially reproduced. The mode of action of such disease remains as obscure and as interesting as that of the curative process in malarial treatment, although it has been the subject of speculation amongst psychiatrists for the best part of half a century. These are assuredly spheres of work in pathogenesis worthy of skilled investigation.

* *Journ. Ment. Science*, October, 1932.

Examination of Blood Serum and Cerebro-Spinal Fluid in Syphilitics and Not-Syphilitics.—Statements have been received from 12 institutions. In a few mental hospitals it is already the practice to examine for syphilis both blood and fluid in all recent admissions, if fit. At Birmingham, from a report received on 210 cases, in addition to the Wassermann test, the colloidal gold test and cell-counts have been done, and the fluid was further examined for its content in albumen, sugar and chlorides. At Winwick, the investigation begun and reported on in 1931 was continued. Over 2,000 cases have been tested by a micro-Meinicke method, and a control series of 500 was used for simultaneous application of numerous (detailed) tests. The relative sensibility of these is set out. A number of publications made from this hospital indicates the extensive work done there in respect of comparative laboratory tests for syphilis. At Bristol, where routine Wassermann tests are carried out on all suitable admissions, a survey of results up to the present deals with 798 new admissions in which the proportion of syphilis was 11.15 per cent. It is hoped by this means to throw light on the possible rôle of syphilis in forms of mental disorder, other than general paralysis. At Derby Borough, all admissions during 1932 gave a positive result in the blood by the Kahn test, in 10.2 per cent. of females and 17 per cent. of males. Thirty-nine mental defectives showed a positive blood-reaction in 28 per cent., Tredgold's figures being given as 15–30 per cent. Figures for Leicester City (all available admissions for the year) were for the blood, 88 females, 5.6 per cent. positive; 76 males, 18.4 per cent. General paralysis was diagnosed in only 15 of these. It is of interest that the percentage of positive results for the sexes combined approximate closely at Bristol, Derby Borough and Leicester City. From Caterham it is reported that the blood and c.s.f. of 1,000 defectives have been examined at the Maudsley Hospital. Time is needed to sift these data. At Monyhull (for mental defectives) out of 360 admissions the Wassermann was positive (presumably in the blood) in 6.1 per cent. At the Fountain (for mental defectives) Wassermann and Meinicke tests of blood in young defectives have been carried out up to the present in 304, and 56 older working patients. Anomalous results have been obtained. It is considered that the Wassermann reaction in young subjects, especially in relationship to mental deficiency, must be regarded with caution. It is of serious importance that the position of doubt thus disclosed should be cleared, and it is satisfactory to know that the matter is receiving attention on so large a scale. At Springfield the c.s.f. is under investigation in a series of cases for possible variations in the amount of reducing substances, especially galactose. Sixty fluids have been examined up to the present.

Encephalitis (lethargica, epidemic, acute and chronic).—At Wadsley (Sheffield) investigations on the lines of those mentioned

in our last Report have been continued and are still in progress. Those bear upon oculo-gyric attacks in chronic cases, the effects of various therapeutic agents, and movements of the eyelids in Parkinsonians. This work has the advantage of the supervision of Professor Arthur J. Hall of Sheffield, a well-known authority on the subject. Fifteen brains have been examined in connexion with work on the pathology of chronic encephalitis. In the course of this study it has been found that there occur—(i) cases with pathological changes slightly resembling those in epidemic encephalitis but with no suggestive clinical history, and (ii) cases with some symptoms similar to those of this disease but with a different pathological lesion. It might be that anomalous conditions of this kind may throw light on some of the cases now classed under schizophrenia. Fourteen cases of oculo-gyric crises, with improvement in 13, are reported from West Park (London County Council) and were published during the year. From Littlemore (Oxford), Dr. Good states that a translation, with adaptations, of von Economo's Monograph has been undertaken, and has appeared in "Oxford Medical Publications." He deals with the intermittent progressions which result in aggravation of symptoms in chronic conditions of brain disease. That such episodes occur in dementia praecox is, as Dr. Good observes, of interest, having regard to their association with diseases like encephalitis lethargica and general paralysis, conditions in which ultra-microscopic or microscopic organisms are operative, whose "flares" of activity [the "Schuebe" of German writers] it is a fair assumption, are responsible for these aggravations.

A very careful and full report has been received from Cardiff of a clinico-pathological nature upon a psychotic form of Acute Epidemic Encephalitis. The condition is an unusual one. The report, which represents the combined work of Dr. R. Ström-Olsen of the Mental Hospital and Dr. J. Gough, Lecturer on Pathology at the Welsh National School of Medicine, well illustrates the high value of co-operative work between a mental hospital and an adjoining School of Medicine: an association which we desire to see formed wherever practicable. It is pointed out that von Economo in his authoritative work on encephalitis lethargica recognizes a group of "irregular forms." In this he includes a purely psychotic type. This has been quite uncommon, but is of considerable interest to the psychiatrist in view of its resemblance to other acute mental disorders. It is observed that the main difficulty in the diagnosis lies in differentiating the acute illness from influenza, and that there is a liability to mistake the psychosis for a post-influenzal toxaemic state. Two chronic cases of encephalitis lethargica are reported from Derby Borough and a communication upon chronic epidemic encephalitis and its treatment has been sent from Leicester City.

Ductless Glands.—At Wadsley (Sheffield) work is reported in conjunction with the University Physiological Department—a

most welcome association, of the kind which we are happy to believe is growing—upon the human pituitary in about 70 cases. At Napsbury (Middlesex) work is being continued on pathological changes in the endocrines in mental disorder. From the Fountain, a report upon the thyroid gland in amentia is based upon the examination of 90 glands from children. It is concluded that no relationship exists between amentia and the appearance of the thyroid, and that different types of amentia present no typical appearances for types, with the exception that in 22 specimens from Mongols evidence of activity of the gland was less conspicuous than in others. No close correlation was found between thyroid and thymus. At The Maudsley a rare condition, acromegaly in one of uniovalar twins, was investigated.

Neurological States, Morbid Histology.—A case of myasthenia gravis is reported from Wadsley (Sheffield) in which, with a rapid clinical history following a possible infection, there were changes in the central nervous system and the thymus and spleen were greatly enlarged. In addition to typical changes in the striped muscles the smooth muscle of the vessels was affected. The changes in the nervous system are attributed to rapid toxæmia. An article on Familial Bilateral Acoustic Tumors was published from the Central (London County) Laboratory. A further (published) investigation at The Maudsley Hospital was concerned with acute encephalitis and the Korsakoff symptom complex. A summary of a publication is sent from Caterham concerning Tuberosc Sclerosis and Allied Conditions: this is described as essentially a developmental anomaly arising in foetal life, the most constant finding being patches (“tubers”) of sclerosis in the brain: psychologically the bulk of this group exhibits mental deficiency with a primitive type of catatonic schizophrenia.

At Leavesden work is in progress on the morphology of the brain in mental deficiency. The histological examination of the brain is also systematically carried out at Stoke Park Colony. Patients to the number of 950 have now been dealt with under the “systematic physical mental and medical examination” referred to in our last Report.

Therapy.—Apart from pyreto-therapy, reference to which has been made above, the following reports have been sent:—The use of x-rays, ultra violet rays, diathermy or radiant heat is mentioned by five hospitals, without further information. At Cardiff, continuous baths are used extensively, ten such having been available for many years. A useful report is made concerning this form of treatment for a period covering the last three years in respect of female patients, the same medical officer having been in charge over that period. The usual practice is to keep the patient in the bath from 7 a.m. to 5 p.m., three full meals and usually tea being served in the bath. A shorter period (7 a.m. to noon or 1 p.m. to 5 p.m.) is occasionally substituted. A

gramophone is said to be a useful adjunct. One hundred and forty-two patients have been treated, including various types of psychosis, chiefly recent mania and excitement in chronic and recently admitted schizophrenia. Mental and physical improvement is recorded in 53 per cent. A table is given summarizing in days (minimum, maximum, average) the time spent in the bath. Prolonged periods are essential for the majority of cases. Averages in the various groups varied from 24 to 58 days. The patients treated are mostly from the reception ward, of a restless and disturbing type. We are not surprised to learn that fewer recent male cases are found suitable for this treatment: organic disease, especially cardio-vascular, renal, and general paralysis are commoner in males, several of whom also are in post-climacteric or pre-senile states. Dr. McCowan further reports from Cardiff upon Light-Therapy, which is in constant use. Here, again, results reported are from the female side, and cover the past three years. The source of light was three tungsten cored carbon rods, and was allowed to act from two to three hours on alternate days: of 157 patients of various types so treated (69 were cases of "retarded depression"), 67 per cent. benefited physically and mentally to a greater or less degree. Cases of agitated depression tend to become more agitated. The average number of days of treatment, with which a table deals, in the various groups, varied from 29 to 75. It is recognized that part at least of the beneficial results obtained is due to suggestive influences, and that the fact that other treatments are employed at the same time on an individual patient (e.g. occupational therapy) renders it impossible to appraise the actual efficacy of light treatment. Nevertheless Dr. McCowan and his colleagues are satisfied that it played some part in the majority of instances in which improvement occurred. We trust this information from Cardiff will lead other hospitals employing these forms of treatment to record their results. At Claybury, in conjunction with Dr. Golla and other workers, acetylcholine is being administered to certain cases showing the sympathico-tonic syndrome in order to ascertain if any mental change occurs with the diminution of sympathico-tonic signs. This drug is also being tried at Colney Hatch, with other arterial anti-spasmodics, in epilepsy, with a view to preventing cerebro-vascular spasm. This we believe to be a recent line of inquiry in mental hospitals. At Claybury, experiments to test the effect of feeding brain to stuporose schizophrenic patients are in progress. Some of the earliest, if not the earliest, recorded work in this direction is that of Haberlandt who, in research reported from the physiological Institute of the University of Innsbruck* entitled "A Stimulating Material in the Central Nervous System," described feeding experiments with raw ox-brain to guinea pigs. Motility and reflex activity were promoted. Confirmation of this

* *Pflüger's Archiv*, 226, 1931, cited in *Zentrabl f.d. ges. Neur. u. Psych.* October 1st, 1931.

work is described by Kronfeld and others* in normal persons and in certain psychotics (increase in cerebral activity, excitability, unrest, activity, disappearance of fatigue). As regards the psychoses, it is stated that more investigation is required. The use of fresh organs—liver, pancreas, thyroid, kidney and, later, adrenals—has doubtless been an empirical procedure from time immemorial and, in recent times, before biochemical methods were available, has been recommended by physicians on grounds chiefly empirical. The trial of fresh brain in states of stupor and depression has as much justification as like empirical procedures. We understand (from another source) that a main difficulty lies in the supply of material in a refined and palatable form at reasonable cost. Somnifane-narcosis was induced at Nottingham City in 17 cases (mania, agitated melancholia, confusional insanity, schizophrenia, and general paralysis). The duration of a course was from 2—3 weeks. The three mania cases showed immediate improvement which progressed to recovery; one relapsed. The melancholics improved and relapsed. Schizophrenics became more accessible, and remained so for months in chronic cases. In the remainder there was no improvement. A mixture of carbon dioxide and oxygen, the former in a proportion of 20—80 per cent., tried in 13 schizophrenics, 2 melancholics and 2 confusional cases, produced, with repeated applications, only temporary lucidity. Publications have appeared during the year on the use of Nembutal in psychiatry from Nottingham City (50 cases) and The Maudsley (53 cases): these agree in the view that this drug is a useful therapeutic addition and, although a potent toxic agent, untoward effects are said to be negligible under the method of administration recommended. There appears, however, to be considerable individual variation in susceptibility.

Out-patient Psycho-therapy.—An interesting summary of methods and results of out-patient psycho-therapy is sent from The Maudsley, from which we have received a list of numerous publications made during the year and of some of the investigations made and awaiting publication, with outlines of these. Some of these communications we refer to in this summary. That now mentioned is based on the investigation of a large number of out-patients. It was found that, for efficient treatment, beds must be available when required, and that some sessions must be held in the evening. As long as patients are grouped (e.g. neurasthenia, obsessions, conversion hysteria, anxiety states) all methods of psycho-therapy are appropriate, each applied to its suitable group, as set out. With careful selection one psycho-therapist could treat about 45 patients over an average period of 4½ months with good results. For many, a brief interview at weekly intervals was, it is claimed, as efficacious as any more extended "and complicated" psycho-therapeutic method.

* *Zeitschr. f.d. ges. Neur. u. Psych. Bd. 136, 1931.*

From Bexley (London County Council), comes a brief report on re-inforced analysis in four cases; auto-suggestion being applied whilst the patient was going to sleep. One case was apparently cured, two cases improved, and one did not improve.

Experimental Psychology.—Studies already reported, under the direction of Professor C. Spearman F.R.S., have been continued at Bethlem Royal Hospital, in conjunction with like work at The Maudsley and at Horton. This has been done by the Research Assistants, Psychology Department, University College. Spearman "factor mental tests" have been applied to over 100 patients. It is found that the patients studied fall into four categories in terms of measurement of certain factors. These categories show agreement with psychiatric classification, but some patients show anomalies when objective scores and clinical records are compared. The objective measurements then point to the need for care in diagnosis and prognosis in these cases. In this way psychological testing should be of assistance to psychiatrists. The full data for these studies will be published. At Colney Hatch records of the respiratory rhythm in various psychoses have been obtained and the influence of different types of thought upon the existing rhythm has been examined. At Caterham a large number of "verbal" and "performance" tests have been carried out. An attempt is being made to devise a suitable "battery" of performance tests for adult defectives of medium and low grades. "The experience of time in Mental Disorder" is the subject of a publication, a copy of which was sent to us with the Maudsley Report. At Colchester, apart from the Research Department, a considerable number of routine mental tests were carried out. Such tests are performed at Cardiff also.

History-taking and After-History of Discharged Patients.—At Macclesfield, an inquiry has been made into the mental heredity of cases admitted during the year. Of these, the relatives of 79 were visited by the social service worker, who obtained a full individual, family and environmental history. A comparison between the histories (79 cases) obtained by the social worker and by the hospital questionnaire (108) sent out to relatives goes to show the advantage of the former method, although the difference in the respective numbers is considerable. It must be admitted that until reliable records of family history in the shape of family pedigrees (being full records of health and disease from generation to generation, not limited to mental heredity, and kept in a uniform manner under medical advice) are available, the information obtained from history-taking will remain of limited scientific value.

At Ewell (London County Council), an investigation into the after-history of patients discharged since its re-opening in 1927 is in progress. Such an inquiry is clearly fraught with difficulties, but, now that social service workers are becoming associated with

mental hospitals and with their out-patient centres, these difficulties should be less formidable. There is assuredly great scope for such inquiry, which has too long been delayed ; with the result that our information on the subject of durability of recovery from mental disorders is very imperfect.

Causes of Mental Deficiency, Classification of Mental Defectives, and Study of their Family Histories.—At the Research Department at Colchester an investigation into the causes of mental deficiency has now been in progress two years under the direction of Dr. L. S. Penrose. The aim of examination and classification of all patients, with detailed study of family histories, is kept steadily in view. Over one-half of the patients had been dealt with at the date of the report. Other investigations at Colchester deal with the relationship of head-size and intelligence, the incidence of congenital syphilis, and the intelligence of children of certified defectives. Brief summaries are given of six publications by Dr. Penrose, amongst which are two dealing, respectively, with the inter-action of heredity and environment in the study of human genetics and with inheritance of intelligence.

Blood-picture in Various Types of Mental Disorder.—This report from St. Andrew's Hospital (Northampton) comprises an analysis of blood-counts done in the laboratory of Wantage House during the past five years, the great majority of which were made by Dr. W. Ford Robertson (now Director of the Western Mental Hospitals Research Institute in Scotland). The total number analysed for red and white cell counts was 461. A differential count was done in 456. Certain well-defined clinical entities were placed in groups, so that each group contained a sufficient number of cases to be of value. In the main (69·4 per cent.) the total white cell counts fell within normal limits. A definite leucocytosis was found in 18·4 per cent. and a leucopenia in 12·2 per cent. The manic-depressive group, with a normal count in 82 per cent., showed the least variation from normal. In confusional cases a leucopenia is relatively common (26·3 per cent. of the counts). Differentially, only 54 per cent. showed a normal count and 33·5 per cent. a relative lymphocytosis. Here again the manic-depressive group showed the least departure from normal, whereas in the dementia praecox group only 51·6 per cent. were within normal limits, as many as 41 per cent. showing a relative lymphocytosis. The authors of this report consider that their results confirm their impression that the blood-count is one of the least important examinations in the laboratory investigation of mental disorders. Other writers have, however, expressed their view that differential counts have their value in estimating the likelihood of recovery from an attack and the approach of recovery or relapse. Such data, it is clear, are only obtainable by repeated and frequent examination in the individual case. It is important, too, to correlate counts, especially differential ones, with the

clinical condition at the time ; since, in a given case, neutrophilia or lymphocytosis may be present at different phases of the disorder. Further, such observations in recent times have included a record of the " shift to the left " (Arneht) and indicated procedure of a nature which makes this class of work more laborious, and doubtless largely accounts for the very small amount of work which has been done in this direction as far as the psychoses are concerned. It is claimed by a recent writer* working on these lines that, in a large number of schizophrenias, the haemogram and leucocytal cause point to the view that infections, partly acute, partly more chronic, of purely toxic processes run, to say the least, parallel to the mental disorder. In a case classed under " dementia praecox " it would be helpful to specify the particular variety of that condition ; and it seems probable that cases coming under catatonia, especially catatonia with stupor, are especially worthy of investigation from this standpoint.

Miscellaneous.—Preliminary work has been done at Cheddleton on the study of intestinal spore-bearing bacilli, with a view to later investigation of their incidence in different forms of mental disorder and their influence, if any, on the human organism. At The Maudsley Hospital, among numerous investigations, is one dealing with the sexual life in puerperal psychoses, 50 women presenting these being compared with 50 not-puerperal cases. Amongst conclusions reached is one to the effect that no material difference in the pre-psychotic sexual life is demonstrable. Further, there is no support for the view that a " puerperal " psychosis is a product of a morbid sexual constitution ; and the puerperium is effective in the same way as any other precipitating cause. Included in work done at the Central (London County) Laboratory by, or under the supervision of, Dr. Golla, we note a publication upon the *pH* of the blood of psychotics measured by the Glass Electrode, and one on the rate of conduction and refractory period of the human sensory neurone. From Macclesfield, a communication of an unusual kind is made, upon the physical characteristics of the skin in some types of psychosis. Individuals investigated numbered 170 females and 155 males, including 50 normal males and 60 normal females as controls. The skin was examined in respect of various points, such as texture, grease-content, peripheral temperature, moisture, cyanosis, as fully set out in tables according to sex, normality and mental state. The findings are considered to be consistent enough to warrant some correlation with the mental state. This is made upon the basis of Kretschmer's work on bodily type and psychic disposition. The conclusion is drawn that the cases of dementia praecox and manic-depressive insanity show certain of the skin characteristics which have been ascribed to the asthenic, asthenic-athletic, dysplastic and his pyknic types respectively. The

* *Sagel Zeitschr. f.d. ges. Neur. u. Psych.* 1930 cxxv.

average age of the psychotic groups is stated, but not the average of the controls. The findings are recognized to be somewhat inconclusive.

Clinical Accounts of Cases.—How much we welcome communications of this nature we have emphasized on repeated occasions. We therefore shall not be misunderstood when we say that, apart from allusion already made to clinical work, space permits only brief reference to the remainder, as follows:—From Birmingham we received records of two temporary patients, and one of intra-cranial birth injury; a case of naevoid amentia from Bexley; from The Maudsley are reported cases of narcolepsy, partial deafness simulating congenital auditory imperception, prolonged manic excitement (4 cases); from Dorset, two cases illustrating Capgras' syndrome; from Derby Borough, cases of angioma of cerebral veins and congenital heart disease; from St. Andrews, a case of pre-senile dementia; from Wonford House, cases of abortus fever, recurrent uraemia with hydro-nephrosis and a small epidemic of herpes-zoster; from Fountain Hospital, two cases of cardiac abnormality; and from Bristol, pellagra (a fatal case, the third in five years) and two cases of melancholia with pernicious anaemia.

Biochemical.—At the Central (London County) Laboratory, estimation of calcium has been made in blood serum and cerebro spinal fluid (this is in the press). Calcium has also been investigated in idiopathic epilepsy, at Gloucester, in the blood in over 60 cases, normal values being found; here also, the blood-sugar was estimated in the same condition, some hundreds of examinations having been made, and conclusions reached (also in the press). At Colney Hatch the results of a research on the acid-base equilibrium in epilepsy are being prepared for publication; blood was examined immediately before, after, and during epileptic crises and comparison made with inter-paroxysmal blood. At Cardiff, as is well known, important work, with the support of the Medical Research Council, is in progress in the bio-chemical laboratory under Dr. J. H. Quastel. We refer here to some of this:—As mentioned in the last report, the effect of the exposure of brain-tissue of various animals to narcotics is a considerable diminution in velocity of oxygen uptake. With the dial kylbarbitonic acid series, this is greater than 30 per cent. when concentrations are used of the order required to induce narcosis in animals. The narcotics inhibit oxidation by the brain of substances important in carbohydrate metabolism, viz., glucose, lactic and pyruvic acid. The evidence points to the absorption of the narcotic at a nervous centre, its competition with lactic acid for the brain catalysts, its hindrance of the access of lactic acid to the centre, whereby the amount of this available for oxidation is lowered. Thus the supply of energy to the nervous centre is diminished, which means a decrease in

functional activity : narcosis. The inference from the point of view of pathogenesis seems to be that other toxic substances, exogenous or endogenous, may also compete successfully for brain catalysts. States of stupor, confusional states, and melancholia may be regarded clinically as examples of a decrease in functional activity, but in mania the reverse would be presumed. We do not picture a shortage of substrates for brain oxidation, or inhibition of oxidation, in those explosive, hurricane-like attacks of excitement which psychopaths—chiefly female, often, it may be, with hyperpiesis—exhibit for trifling reasons in ordinary life, and which cause so much distress and embarrassment to others. These comments are only to emphasize the profound interest attaching to the kind of work we are considering. Dr. Quastel's further experiments show that the carbohydrate metabolism of the liver is also affected by narcotics. Prolonged narcotic treatment has been hindered by the appearance of toxic symptoms after a few days. Ketonuria was found to occur regularly after prolonged narcosis. This confirms the conclusion that carbohydrate metabolism is generally affected by narcotics. By simultaneous administration of glucose and insulin, ketonuria and other serious complications have been eliminated. Thus prolonged narcosis will, it is hoped, be rendered safer. The modified treatment is now under clinical investigation in the hospital. In view of the importance of carbo-hydrate metabolism for the functional activity of the nervous system and of Dr. Quastel's finding, that the naturally occurring sulphur compound, glutathione, plays a dominating rôle in regulating this metabolism of the cell, the relation between sulphur compounds and carbohydrate metabolism is being studied. The recent work of Zondek and Bier on the bromine level in blood of psychotics, which needs corroboration, is being repeated.

By Order of the Board,

(Signed) L. G. BROCK,
Chairman.

(Signed) P. BARTER,
Secretary.

Caxton House West,
London, S.W.1.
June, 1933.

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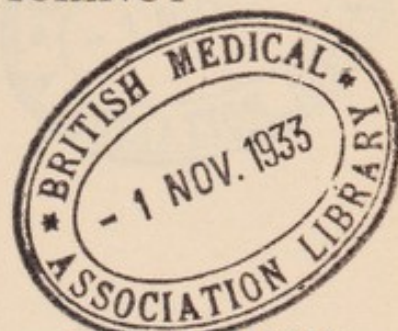
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THE
NINETEENTH ANNUAL REPORT

OF

THE BOARD OF CONTROL

FOR THE YEAR 1932

PART II

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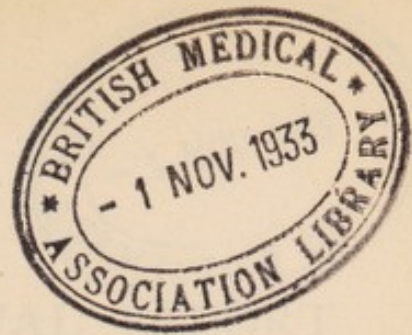
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I.—THE JOINT BOARD OF RESEARCH FOR MENTAL DISEASE (CITY AND UNIVERSITY OF BIRMINGHAM).

A.—*Laboratory Report (Two Years)*.—By Dr. F. A. PICKWORTH, B.Sc., Laboratory Director.

General.

Research in the past two years has been chiefly in the application of the newly discovered stain for vessels in thick brain sections and the regular examination of brains for localization and type of vascular abnormality.

Irregularities of blood supply have been found especially in cases of General Paralysis; they also occur to a lesser degree in all chronic forms of mental disease so far examined. 541 sections 250μ from 53 brains have been examined—36 animal brains being used for control. The findings have included focal and widespread ischaemia, occlusion of vessels, scars of old vessels, increased amount of vessels (partly granulation tissue and partly collapse of brain areas), partial disappearance of gyri, focal areas of necrosis, cortical scars and thinning of cortical layer, focal and widespread loss of cortical cells, periventricular atrophy, capillary haemorrhages, capillary leakages of serum and perivascular distension with debris and glial accumulations.

A number of catheter specimens of urine have been examined with a view to determining the extent of bacteriaemia with non-pathogenic organisms, the results have shown an astonishingly large proportion with organisms, this is being further investigated. Controls of containers and media are uniformly sterile. The results of our previous experiments with Red Blood Corpuscles have been collected and published.

Bacteriological.

Specimens, 11,595 in number, have been examined and reported upon; 9,478 from Hollymoor and Rubery, 1,248 from Winson Green, 634 from Monyhull and 54 from other hospitals. 2,482 Wassermann tests have been carried out, 445 being positive. 2,026 Widal agglutination reactions showed agglutination to one or more organisms of the typhoid dysentery class in 135. 485 colloidal gold tests of c.s.f., with 131 positive; 61 Widal tests of c.s.f., with only 1 positive (strongly positive also in blood). Bacteriological examination of c.s.f., 6. Nasal sinus washouts examined bacteriologically number 624; 375 nasal diphtheria swabs gave 19 positive, and 63 throat swabs 14 positive. Blood cultures 10, Catheter specimens of urine 556, 442 of these also for T.B. 714 bacteriological examinations of faeces, 9 for T.B., 88 sputa for T.B. 20 positive. 54 bacteriological examinations of tonsils, 23 cervical swabs, 11 films for malaria, 9 vaccines, 353 animal Widal's, and 719 swabs taken at post-mortem examinations.

Histological.

Specimens, 211 in number, have been mounted for Museum purposes, these include 40 sphenoids, 67 antra, 54 specimens of nervous tissue, 11 dry bone specimens and 21 of other viscera. Decalcification and section with subsequent staining for gram positive organisms has been carried out on 82 sphenoids, 34 giving positive findings; 22 pituitaries for gram positive organisms, 3 positive; 27 carotid artery, 5 positive, 22 cervical and other tissues have been examined for malignancy. 157 microphotographs and 76 lantern plates have been made. 541 sections 250μ from 53 brains have been stained and examined. 409 cerebro-spinal fluids have been examined cytologically, 46 nasal sinus washouts, 22 cytological examinations of blood, 344 microscopic examinations of urine, and 19 films for gonococci.

The nasal sinuses have been examined at 168 post-mortems; one or more sinus was affected in 124 cases, actual pus in one or more sinus in 65, polypi in 47, thickened membrane in 42.

Chemical.

Cerebro-spinal fluids.—199 globulin tests, 158 sugar, 159 chloride estimations. *Blood*: sugar estimations 15, urea 7, haemoglobin 8, colour index 7, Van den Bergh 1, calcium 2; *Urines*: general 615, chlorides 48, phosphate 24, sugar 14, Indican 6, urea 8.

Publications.

"Permeability of Vital Membranes. The Red Blood Corpuscle." D. L. WOODHOUSE and F. A. PICKWORTH. *Biochem. Journ.* 1932. xxvi, 309-316.

"Die Beziehungen von Erkrankungen der Nebenhöhlen zu Geisteskrankheiten." F. A. PICKWORTH. *Zeits. für Neurologie und Psychiatrie.* B.D. 141. 1932. 420-459.

"The Pathology of the Nasal Sinuses and its relation to Mental Disorder." F. A. PICKWORTH. *Journ. Ment. Sci.* 1932. 653-703.

"The Influence of Septic Infection of the Sphenoidal Sinus upon the Cerebral Blood Supply." F. A. PICKWORTH. *Journ. Laryngol and Otol.* 1932. xlvii. 797-807.

B.—*Clinical Report.* By Dr. T. C. GRAVES, F.R.C.S., Chief Medical Officer, Birmingham City Mental Hospitals Committee.

General.

During the past year, the work of investigation and treatment of septic and other bodily conditions has been continued by the various departments: Dental, Ear, Nose and Throat, Gynaecological and Ophthalmological.

In the Ophthalmological department, under Dr. Alabaster, an investigation is proceeding by means of specially devised record cards to observe the relation between other conditions found and ocular disturbances.

Malarial and other pyrexial treatment has been given in General Paralysis and some notes on malarial treatment by Dr. J. M. MacKenzie are appended.

Statistics bearing on the findings of Sinus Disease especially in relation to the sphenoidal sinus are given and the incidence of B. Influenzae (Pfeiffer) in nasopharyngeal and sinus infections is discussed by Dr. Kathleen A. H. Sykes.

Papers and Publications.

"Non-Specific Therapy in Mental Disorder." T. C. GRAVES, *The Lancet.* July 9th, 1932. pp. 57 and 115.

"Sinusitis and Mental Disorder: Clinical Manifestations." T. C. GRAVES. *Journ. Ment. Sci.* 1932. pp. 459-644.

"Absence of Left Restiform Body resulting from Intracranial Birth Injury." J. M. MACKENZIE. *Journ. Ment. Sci.* 1933. January. pp. 167-170.

"The Routine Investigation and Treatment of Cases admitted to Rubery Hill Mental Hospital." KATHLEEN A. H. SYKES. *Journ. Ment. Sci.* 1933. January. 223-224.

Ear, Nose and Throat Department.—Consulting Surgeon, Mr. E. MUSGRAVE WOODMAN, M.S., F.R.C.S.; Visiting Surgeons, Mr. W. STIRK ADAMS, F.R.C.S., Mr. E. C. N. STRONG, F.R.C.S.

Investigations into the incidence and the treatment of nasopharyngeal sepsis have been continued during the past year. Some statistics of the findings made during 1932 joined with those of the preceding years of the investigation are given below, especial consideration being given to those of the sphenoidal sinus.

Sinus Disease.

One thousand two hundred and forty-five cases have now been investigated by suction-exploration of the nasal sinuses by the Watson-Williams technique, 621 males and 624 females. As a rule in these procedures, all the six sinuses are investigated, sphenoids, ethmoids and antra, but the statistics contain a number of cases where the investigation has for various reasons been limited to the antra.

A review of the findings in those cases where the larger procedure has been effected demonstrates the desirability of including all these cavities in the examination whatever the findings in the antra. If the antra are found diseased it is highly probable that another sinus may also be involved, whilst if the antra are free from disease on clinical examination it is not unlikely that the case may be one in which the posterior sinuses may be involved, sphenoids and, or, ethmoids.

Number of Sinuses involved in disease.—Out of 1,245 cases, 621 males, and 624 females, positive clinical evidence of sinus disease was found in 1,001 cases—512 males and 489 females.

If cultural bacteriological evidence is taken into account the figures would be much higher.

The number of these six sinuses involved on clinical grounds was :—

	Male.	Female.	Total.
One sinus in	138	139	277
Two sinuses	143	145	288
Three sinuses	71	80	151
Four sinuses	88	60	148
Five sinuses	31	33	64
Six sinuses	41	32	73
TOTAL	512	489	1,001

The Distribution of the Sinus Disease.—The distribution of the sinus disease, whether associated or not with tonsillar disease in these 1,001 cases was as follows :—

	Male.	Female.	Total.
Antra alone or with others	397	388	785
Ethmoids " "	247	246	493
Sphenoids " "	178	174	352

Sphenoidal Sinusitis.—Some statistics have been extracted showing the incidence of sphenoidal sinusitis alone and in relation to other sites of sinusitis and to tonsillar disease in these 1,001 cases—512 males and 489 females.

Of 352 cases where sphenoidal sinusitis was present, 178 males and 174 females there were of :—

Sinus Disease without Tonsil Disease.

	Male.	Female.	Total.
Sphenoidal disease alone	7	3	10
Sphenoidal with ethmoidal	21	14	35
Sphenoidal with ethmoidal with antral	58	37	95
Sphenoidal with antral	12	13	25
TOTAL	98	67	165

Sinus disease with Tonsil Disease.

	Male.	Female.	Total.
Sphenoidal disease alone	7	14	21
Sphenoidal with ethmoidal	9	22	31
Sphenoidal with ethmoidal with antral	46	55	101
Sphenoidal with antral	18	16	34
TOTAL	80	107	187

Sphenoidal disease, without other sinusitis, with and without tonsil disease.

	Male.	Female.	Total.
Sphenoidal disease	7	3	10
Sphenoidal with tonsil disease	7	14	21
TOTAL SPHENOIDAL DISEASE	14	17	31

Thus in only 31 cases out of 1,001, 3 per cent., was the disease restricted amongst the nasal sinuses solely to one or both sphenoids. In the other cases, the sphenoidal sinusitis was part of a pansinusitis or a multisinusitis.

C.—Some Notes on Malarial Treatment. By Dr. J. M. MACKENZIE, D.P.M.

During the year 1932, the use of malaria was continued in the treatment of general paralysis and also extended to include a few cases of other types of psychosis.

In the earlier part of the year a strain of malaria which had been introduced into the hospital early in 1931 was maintained by direct blood inoculation from individual to individual; this strain was passed successfully through a series of 7 patients, and with collaterals accounts for 9 patients treated here. Blood was also supplied to other institutions in the district.

The above 9 patients were all general paralytics, 8 males and 1 female. Of these, 3 are still in the institution, 3 were discharged and have remained at home, and 3 were discharged only to be readmitted. One of these is still in the institution, one returned and later died, and one was discharged a second time and has since remained at home.

This strain was stopped in May, 1932. The fever was of a pure tertian type in six instances, but in the other three a quotidian fever was noted. This variation has been frequently remarked upon in the literature on the subject. This particular strain commenced as a pure tertian, continued so in the first three patients, became quotidian in the next two, and reverted to tertian type in the last four.

The number of rigors allowed before stopping an attack by quinine varied with the general condition of the patient, the minimum being 4, the maximum 13, with an average of 8.

The average maximum temperature during the rigors was 104.4° F. with this particular strain.

The second strain was commenced in August 1932 and is still being used. Up to the end of 1932 it had been passed through a series of 9 patients, but including collaterals 14 cases in all were treated, 10 general paralytics and 4 of the dementia praecox group, all of whom are still in the institution. Of the general paralytics, 4 have been discharged, 4 remain under care, and 2 have died.

This strain was originally of the quotidian type, and has remained substantially so throughout. With this strain the average maximum temperature during a rigor was 104.1° F., the average number of rigors being 9.

Direct inoculation from patient to patient has been found very satisfactory. Eight to 10 cc.s of blood are withdrawn from a vein into a hypodermic syringe and immediately injected subcutaneously between the scapulae of the recipient. The resultant swelling is massaged until it disappears, and the patient put to bed and kept there till the fever commences. In only 4 instances has this not occurred, and in 3 of these the patient had had malaria previously. Twenty-three inoculations have been successful during the year, the period of inoculation varying from 6 to 18 days. As far as possible, the blood is withdrawn after a rigor when free merozoites are in the blood-strain, but this does not appear to be of great importance so long as the malaria is well established in the donor.

The injection of oxalated blood sent to a distance has proved less satisfactory. In many cases the injection is unsuccessful and it has proved in the end more satisfactory to send the patient to the donor to be inoculated by the direct method.

D.—*An Account of Fifty Influenzal Carriers in Cases of Mental Disorder.*
By Dr. KATHLEEN A. H. SYKES, D.P.M.

It is universally admitted that an attack of influenza is frequently followed by profound depression. Indeed, Sir Thomas Horder (Price's Textbook of Medicine) states that this is "the most common complication." Other more malignant mental states are mentioned in every account of complications and sequelae, and so well is this neurotoxic action of influenza recognized that the disease is specifically mentioned in the official "Causes of Insanity."

Osler mentions the persistence of B. Pfeiffer in nasal and bronchial secretions after the severe symptoms have subsided, in one case for as long as three years, and Horder mentions sinusitis as a "common and troublesome" complication in which the bacilli may be found in the nasal sinuses.

For these reasons it was thought that an account of 50 mental hospital patients in whom B. Pfeiffer was found in tonsils, nasal passages or sinuses would be of value. None of these cases appeared to have any clinical illness at the time of investigation, which was usually done under a general anaesthetic. Material for examination was taken by the ear, nose and throat surgeon from the nasal passages, from swabs of the tonsils *in situ* or after removal by dissection, and from nasal sinus washouts obtained by the suction-exploration method during the process of a general sinus examination. Such material was passed directly to the pathologist and examined by the Joint Board of Research in their laboratories. Different media were employed, tryptagar or blood agar most commonly.

Localities of Infection.

Tonsils.—B. Pfeiffer was found in the tonsils alone in 5 of the 50 cases, in tonsils and sinuses in 5 and in tonsils and nasal passages in 2 cases.

Nasal passages.—Alone, 7 cases. With tonsils 2, with sinuses 6. In 6 cases the infection was unilateral, in 9 bilateral.

Nasal Sinuses.—In 37 cases the nasal sinuses were found infected with B. Pfeiffer. One sinus only was found infected in 22 cases; 2 sinuses only in 12 cases; 3 only in 2 cases; 4 only in 1 case.

There were 2 cases of bilateral antral infection, and 3 of bilateral sphenoidal infection, but in no case were the two ethmoidal cavities infected.

In 2 cases the infection was present in nasal passages, sinuses and tonsils.

Reaction of Mucosa to Infection with B. Pfeiffer.

In 17 cases, although the washout was found to contain *B. Pfeiffer*, it did not show any evidence of mucosal reaction to infection. In 20 cases definite evidence of reaction was found. In 2 of these the washouts were haemorrhagic, in the others varying amounts of mucopus and pus were present.

The following table shows the distribution of the infection in the 3 pairs of sinuses, and in relation to mucosal reaction :—

Clinical evidence of mucosal reaction.	Antra.		Ethmoids.		Sphenoids.	
	R.	L.	R.	L.	R.	L.
Reaction	8	11	3	2	2	4
No reaction	6	5	1	3	8	5

In 1 case the bone was noted as sclerotic.

In 33 cases the infection was mixed, but in 4 cases *B. Pfeiffer* was found in pure culture, in the left antrum, right sphenoid and left sphenoid with reaction, and in the right ethmoid where there was an associated purulent reaction.

Duration of Residence Prior to Investigation.

Pfeiffer's bacillus was found principally, but not solely, in the more recently admitted cases. Of the 50 cases under consideration, 40 had been in residence for a period of one year or less, but the remaining 10 had been certified for longer times varying up to 11 years.

Months of the Investigation.

A large amount of investigation of ear, nose and throat conditions is constantly proceeding at this hospital, and these 50 cases of *B. Pfeiffer* carriers were found to have been discovered at every season of the year. Some indeed were found in every month, but the greatest incidence was in November, December, March, April and June. It will be seen that the time incidence does not correspond with the usual periods of epidemic influenza.

Results of Treatment.

The interesting fact emerges that for these carriers of *B. Pfeiffer*, the death rate is higher and the recovery rate lower than the general death and recovery rates of other cases of nasopharyngeal sepsis. Of the 50 cases here considered, 18 have been discharged, i.e., 36 per cent., as opposed to a rate of 53.6 per cent. for all cases of sinusitis.

Thus this investigation would support the commonly held opinion of the special neuro-toxic action of *B. Pfeiffer*, and would indicate that this can be exercised in cases in which there is no evidence of inflammatory response to its presence.

The papers (E-J) which follow were omitted from last year's Report owing to pressure on space ; they relate generally to investigations carried out during the year 1931.

E.—*The Wassermann Reaction in the Blood and Cerebro-spinal Fluid in 210 cases.* By Dr. W. H. SHILVOCK, B.Sc.

During the year 1931, specimens of cerebro-spinal fluid have been obtained in sufficient amount for the application of all the laboratory tests, together with blood specimens, in 210 cases. All recent admissions, when fit, together with patients who exhibited symptoms and signs common

both to syphilitic and non-syphilitic mental disorders have been so examined. Repeated punctures on cases of General Paralysis for laboratory assessment after treatment have been carried out, and these also have been included.

The examination of the cerebro-spinal fluid has consisted of the Wassermann reaction, Lange's colloidal gold test, cell count, presence of albumen, together with estimations of the sugar and chlorides. In many cases the Widal test in the cerebro-spinal fluid also was done. This, however, failed to give any useful results and therefore the test was discontinued. It is known that, as a result of treatment, the Wassermann reaction in both blood and c.s.f. can be changed from positive to negative. This change does not take place to an equal degree in both fluids, as the reaction in the blood is influenced more quickly and more thoroughly by treatment than the reaction in the cerebro-spinal fluids.

Thus the possibility arises of cases being admitted, in whom, whilst the Wassermann reaction in the blood is negative, it is positive in the c.s.f. Such cases would be missed by examination of the blood only.

Apart from the cases of General Paralysis, there has been no gross variation from the normal protein content. The pressure of the cerebro-spinal fluid, as withdrawn by Barker's lumbar puncture needle, showed variation quite irrespectively of the existing mental disorder and the laboratory findings.

Of the 210 specimens taken, in all but 7 the Wassermann reaction in the blood and c.s.f. was in substantial agreement. These 7 showed positive Wassermann reactions in the c.s.f., although the blood in each was completely negative. In a few other cases the c.s.f. showed changes suggestive of a previous syphilitic infection, e.g., increased globulin, colloidal gold curve, but the Wassermann test was negative in blood and c.s.f. Of these 7 cases, 3 were later found to have had anti-syphilitic treatment before admission and the remainder, who all came to post-mortem examination, were found to have changes in their brains characteristic of General Paralysis, thus agreeing with the laboratory findings previously obtained.

F.—*Intramuscular Colloidal Sulphur (Aqueous) Therapy.* By Dr. W. H. SHILVOCK, B.Sc.

The observations made on this therapy and incorporated in the report for 1930 have been continued during the past year.

Colloidal sulphur has been given to 95 cases of both syphilitic and non-syphilitic psychosis. Previously the preparation of sulphur in olive oil had been principally used, but this has been almost entirely replaced by that of 1.0 per cent. colloidal sulphur, the vehicle being plain distilled water.

The advantages of the watery preparation were discussed in last year's report, and have been confirmed by the past year's work. One especial advantage is that the preparation can be used immediately without the necessity of warming.

The technique of injection has been the same as previously employed with the oily preparations, but generally the course has been reduced to 5 injections commencing with 1 c.c. and increasing to 5 c.c. by 1 c.c. increases. Injections are given on alternate days if the temperature is down to normal. The cases have been practically equally divided between the two sexes. The females do not appear to give such high pyrexias as the men, but the duration of the temperature is on the whole longer, whilst the acme of the pyrexia is reached more rapidly, frequently within six hours. The cases treated for the most part have been recent admissions, but also cases of fairly long standing mental states have received this therapy. The local reaction objectively has certainly been always less than with the oily preparation, and on the whole, the subjective appreciation of the local reaction has been more discomfort than that of the pain produced by the oily preparation, in both sexes.

Mention was made in last year's report of a focal reaction as part of the process induced by this agent, and it has again been frequently observed that a focal reaction does ensue. Focal reactions have been observed especially in nasal and gynaecological sepsis, the result being increased discharge from areas where little or no reaction was occurring prior to this therapy. The improvement in anaemic states following the use of this agent indicates that a similar focal reaction is occurring in the blood-forming tissues.

Recovered patients on several occasions have dated their recognition of improvement from the period in which they had "the injections in the legs." One patient, a qualified medical man, who was admitted with an acute confusional state of septic and non-syphilitic causation, stated that the fascial and muscular pains which he had experienced for years prior to becoming mentally ill completely disappeared after this therapy, and reported that there had been no recurrence of these pains nearly a year after discharge.

Total number of cases treated with aqueous colloidal sulphur, 95.—Syphilitic: (a) Paretic 4; (b) Non-Paretic 3; Non-Syphilitic, 88.

Many of these cases have been treated only recently, so that the figures given cannot be regarded as complete in estimating the ameliorative possibilities of this agent. Some writers have indicated doubt as to the value of this therapy; but our experience is that it is a safe agent, and should be further investigated. Needless to say, our best results have been in nearly all cases obtained with this therapy after operative treatment of septic foci.

G.—*Two Temporary Patients.* By DR. KATHLEEN A. H. SYKES, D.P.M.

The clinical records of these two cases are submitted, as they were the first two of the temporary class to be admitted to this hospital.

Examination showed that the mental disorder was influenced by a basis of physical disease, and that an improvement in this, following treatment, resulted in a concurrent mental improvement.

CASE I.

A girl typist, P.M.H., aged 20, was admitted as a temporary patient on March 13th, 1931, on her first attack of mental illness.

Family History.—Father, two brothers and a sister older than patient, all well. Mother well, but stated to suffer from nasal catarrh and sore throat.

Personal History.—The patient had a normal childhood till the age of 7, when she had an operation for appendicitis. After that she did not seem so robust, and suffered from chronic constipation. She had scarlet fever and subsequent nasal catarrh. Her intellectual development was normal. Emotionally, she was a quiet girl who did not care for dances or cinemas, was always devout, was attached to all members of her family but did not appear interested in men or boys.

History of Illness.—Some months before the acute onset of her illness the patient had joined a very rigid sect and threw herself fervently into their religious activities. This was against the wishes of her parents. In the middle of January she became worried about her work, apparently without cause, and was brought home from the office. She was noticed to be increasingly strange in manner. She turned against her family, stripped off her clothes, declared that various people were Christ, and spat about the house. Her appetite was poor and she refused food.

On admission to Mental Hospital she was found to be a slenderly built and poorly nourished girl, with reddened tonsils and a temperature of 100° F. She lay in bed with her eyes closed, took no notice of her surroundings, rhythmically and continually took deep breaths, holding them till her face was blue, then spitting out frothy saliva and murmuring "Papa." Her hands were fixed in an attitude of prayer, with the finger tips so pressing into her throat that an ulcer had been formed.

She had an old weak appendix scar, heart sounds were of poor quality, she had much pus in nasopharynx, the urine was acid, specific gravity 1032 and contained pus and albumen; the faeces were dark and contained mucus. She was wet and dirty, although frequently raised. Examination of the nervous system was difficult. Her eyes were firmly closed, and when the lids were forcibly raised the eyeballs rotated

upwards. The palatal abdominal and plantar reflexes were normal, the patellar and suprapatellar reflexes much increased and equal. She appeared insensative to pin pricks on her legs but appreciated a subcutaneous injection in the abdomen. There was no waxy flexibility. She was resistive to all attention and treatment. She would take fluids, barley water or lemonade only, but refused milk, once saying that "it was Papa's blood."

Treatment and Progress.—In the two days following admission she was given 20 c.c. of Anti-Scarlatinal Serum. On the third day her stomach was washed out with sodium bicarbonate solution and a bile stained return obtained. She was tube fed morning and evening and the tube feeding was required from March 20th to May 2nd. Throughout this period she was futile, resistive, very faulty, and noisy at times. She would not speak to the staff, but appeared to recognize her parents when they came to see her, babbling in a childish way at some visits, at others not speaking at all. The only change noted was that she did not press her hands so closely against her neck, so that the ulcer began to heal. She was given pituitary elixir, and continuous colon irrigations were started, mucopus being obtained from the large intestine. Two injections of anti-typhoid paratyphoid vaccine were given intramuscularly, and later at the end of April three doses were given intravenously. After the intramuscular injections she gradually became clean in habits, and the day after the second intravenous dose she drank the feed that had been prepared, and then took a full mid-day meal. Her blood had been examined, the Wassermann reaction was negative, but there was an agglutination varying between 30–60 Oxford Units to B. Aertrycke (Mutton). By May 19th she had so far improved that it was possible for the ear, nose and throat surgeon to examine her. He found that she had liquid pus in both tonsils and impaired translucency of both antra, and recommended tonsillectomy and sinus examination by the Watson-Williams technique. She was still restless and noisy at times and had impulsive outbursts, once tried to get through the ward window, and frequently threw herself out of bed on to the floor. She spat about the ward. On June 10th under general anaesthesia her tonsils were removed by dissection and the sinuses were examined. Flakes of pus were found in both ethmoids and both antra, and the latter were drained intranasally. Two days later she asked for gargles, and answered simple questions correctly, and the next day she volunteered her first remark since entering hospital. Within a week of the operation she co-operated willingly in all treatment, had become quiet and clean, talked freely to staff and to her visitors, and wrote a letter asking to be allowed to become a nurse at the hospital.

Progress continued, and on July 20th she became a voluntary patient. She stated then that she did not remember her admission to hospital, or any events prior to the injections of T.A.B. She realized that she had been ill and was now better, and expressed her gratitude for the care and treatment she had received. By this time she was obedient, well behaved, freely communicative, and helped a little with the ward work, showing initiative.

On June 27th she commenced a course of six intramuscular injections of aqueous Colsul (Crookes) to which she gave satisfactory pyrexial reactions. Shortly after this she spent a weekend with her family who were very pleased with her state. Menstruation, which had always been irregular, had been in abeyance since some weeks before admission.

After further daily progress and periods of parole, she regained full physical and mental health and was discharged at the beginning of September. Shortly after this menstruation was re-established without any untoward symptoms. Recently when she came to report she was found to be in robust health and she has been accepted as a probationer nurse at another (general) hospital.

This case is presented without comments. The diagnosis is obscure, dementia praecox, hysteria and stupor all being possibilities, while many of the symptoms would accord with a nervous disorder of pure psychogenic origin. However that may be, it is incontestable that the marked improvement resulting in cure only commenced within a few days of radical treatment of the chronic infective process from which the patient had been suffering so long.

CASE 2.

Mrs. L.G.M.G., aged 50, was admitted as a temporary patient on October 1st, 1931, on her first attack of mental illness.

Family History.—Father died at 75, neurasthenic. Mother died of pulmonary tuberculosis at 54. A brother and sister living, of nervous temperament; a sister dead, of Bright's disease. A paternal cousin insane.

Personal History.—The patient had a normal childhood, and left school at 14, standard VII. She worked successfully as a typist till at 23 she married, happily. She had a son, two daughters, and one miscarriage. She was always regarded as being nervous and highly strung, being bright and cheerful in company and depressed afterwards. At the age of 29 she had a bilateral nephropexy and for a time her nervous state improved. Later she became anaemic, complained of headaches, took up Christian Science, and visited many specialists for nerves. Her menstrual periods became irregular and she had amenorrhoea for the three months prior to admission.

Later History of Illness.—For three months prior to admission the patient had gradually become depressed, agitated, apprehensive and confused. She developed ideas of unworthiness and finally asked if she had committed a murder, and insisted that any visitor had come to take her to prison. Her appetite failed and she lost weight.

On Admission to Mental Hospital she was so ill that she was put on sick notice immediately. She was thin (weight only 6 st. 12 lbs., height 5 ft. 3 ins.) pale and in poor general health, with gross dental sepsis round crowned teeth, and a weak and irregular pulse. The urine contained albumen. She was faulty in habits. She was depressed, agitated, deluded and slightly confused. She had marked visual and auditory hallucinations.

Treatment and Progress.—She refused food, and required to be tube fed twice, after that she ate fairly well. She started a slight menstrual period ten days after admission and became a little quieter. The Wassermann and Widal reactions in her blood were negative, and on gynaecological examination nothing abnormal, beyond early senile changes, was found. On October 10th under ethyl chloride anaesthesia, eight of her crowned and infected teeth were removed. Ten c.c. of Collosol Calcium (Crookes) was given prior to this, by intramuscular injection, and temperature and pulse remained steady. After this she improved physically, but still had periods of noisy destructiveness and her delusions remained. On December 23rd she was examined by the ear, throat and nose surgeon who found that her tonsils were small and fibrotic and that she had liquid pus in the left. On December 19th, 20th and 21st, she had small intramuscular injections of anti-typhoid paratyphoid vaccine, which produced no reaction. On the 29th she became very depressed and agitated. On January 3rd, 4th and 5th, she had intramuscular injections of 5, 10 and 10 c.c. of Collosol Calcium and responded with temperatures of 100.8° F. on the evening of the 4th and 100.6° F. on the evening of the 5th. On the 6th, under a general anaesthetic, her tonsils were removed by dissection. For a time her pulse was poor, but after an injection of 1 c.c. Cardiogol and 10 c.c. Collosol Calcium it improved. Her temperature did not rise above 99.2°. From January 11th to the 14th she was given 10 c.c. of Collosol Calcium daily by intramuscular injection; but, in contra-distinction to the sharp rises produced prior to operation, the temperature reached 98.4°, 98.8°, 98.8° and 99.4° only. She remained depressed and negativistic, but was no longer faulty in habits, and her urine was free from albumen. On January 24th she was given another intramuscular injection of anti-typhoid paratyphoid vaccine, and from January 25th to February 2nd she received six intravenous injections. To these she reacted well, her temperature response reaching 103.6° and her maximum pulse rate being 120.

After this course, though she still had periods of depression, bright and happy intervals appeared.

On February 21st she went out with her husband on parole, and he expressed pleasure at her improvement. By the 24th she was working voluntarily in the ward, showing initiative and completing each task without supervision. Her facial expression, colour and general carriage were much improved. She realized that she had been ill and was now better: stated that she did not remember the period of her admission to hospital, or being tube fed: and said that for the last month she had been coming to herself and "had not had those idiotic delusions." Her weight was 8 st 4 lbs. as contrasted with 6 st. 12 lbs. on admission.

Her improvement continued, and, after a further period of parole, she was discharged "Improved" on March 5th, as it was not possible to retain her longer as a temporary patient.

This case is not claimed as a "cure," although her husband stated that "she was better than she had been for years": but is offered as an instance of the help that may be given by an intensive though brief course of treatment to a case in which hereditary influences and continued physical ill-health had produced a grave and chronic state of mental disorder.

H.—*An Unusual case of Intracranial Birth Injury.*—By Dr. J. M. MACKENZIE, D.P.M.

The patient, a boy, W.B., aged 10 years, was admitted on September 23rd, 1929. Prior to this he had been a patient in a Sick Children's

Hospital. From there he was transferred on June 15th, 1928, to the observation ward of a Poor Law Institution on account of his abnormal conduct, and the fact that he was a bad example to other children. He became unmanageable in the Poor Law Institution, was certified and admitted here.

The facts of his certificate were as follows: "With only very short intervals he raved, shouted, made uncouth noises, banged his head, threw himself about, bit at things and ceased to pay any attention to what was said to him."

His birth had been a difficult forceps delivery, and in childhood he was given to striking his head with his hands for no apparent reason. Though his parents state he was alert mentally, it was not until he was nearly 8 years old that he went to school, where he remained for a year, and is said to have made good progress. He became excitable and noisy about Easter 1928, had to be removed from school and put under institutional care as above noted.

On admission here he was in a semi-stuporose condition, but soon became violently excited, threw himself out of bed and repeatedly struck his face and head with his fists. This phase continued, and on October 7th, 1929, it was found that he had an abscess in the nasal septum which was opened and drained. He became somewhat more amenable and for the first time full physical examination was possible. The viscera in the chest and abdomen revealed no sign of active organic disease. The positive neurological signs were as follows:—*Legs*.—Marked hypotonia on both sides with hyperactive knee jerks and ankle jerks, the left in each case being more marked than the right. Plantar reflexes blunted but flexor. No clonus. No true Rombergism. *Abdominal reflexes*.—Right absent, left present. *Cremasteric reflexes*.—Absent. *Eyes*.—Pupils equal and reacted normally. Fundi normal. There was a concomitant internal squint in the left eye. Movements were full and there was no nystagmus. *Arms*.—Triceps and supinator jerks more active on left side. There were constant coarse choreiform movements of the head and arms with much asynergia.

The boy was pale and thin and the possibility of a latent tuberculoma or tuberculomata in the cerebellum was considered, in spite of the fact that there was no definite evidence of increased intracranial pressure. An X-ray of the head showed no abnormality.

He received some necessary dental attention, but this removal of possible sources of reflex irritation made no difference to his restless and noisy condition.

Liquor arsenicalis and various sedatives were tried, but in no case did any real benefit accrue. Unless he were actually kept asleep the coarse, uncontrolled movements continued and he received many self-inflicted bruises on the head and face. This state of affairs continued until on April 6th, 1931, when he had an epileptiform seizure, and became quite unconscious. There were no localizing signs of any new intracranial lesion. His temperature rose to 105° F. in an hour, when he had a similar seizure and two hours later died.

In deference to the wishes of his parents, the post-mortem examination was confined to an examination of the contents of the cranial cavity.

Post-mortem appearances.—The scalp and skull were normal. There was no convolitional change such as might be associated with mental deficiency. There was a considerable amount of generalized oedema of the brain. The right olive was much smaller than the left, and on dissection and transverse section at different levels, the following facts were ascertained.

(1) *Section 5 mm. above the junction of medulla and cord*.—Stringy adhesions of pia-arachnoid from the cord to the right side of the cerebellum in the region of the flocculus.

(2) *Section in the lower olivary region.*—On the right side no communication whatever existed between the cord and the cerebellum. On the left side there was complete communication.

(3) *Section in the mid-olivary region.*—Still no connection existed between the right side of the cerebellum and the cord, with complete communication on the left side.

(4) *Section in the lower pontine region.*—Incomplete communication on the right side between cerebellum and pons. Complete union on left side.

The superior and middle cerebellar peduncles were complete on both sides, and section of the cerebellar hemispheres and of the medulla and pons showed no abnormality in the deep cerebellar nuclei. The right olivary nucleus was slightly smaller than the left.

Comment.

We appear to be dealing with a case of absence of the right restiform body, and it seems reasonable to suppose, in view of the history of difficult delivery, a life-long abnormality of movement and the presence of adhesions of pia-arachnoid in the vicinity, that the restiform body was torn at birth. The fibres which run in this structure are afferent from the cells of Clarke's column, the nuclei gracilis and cuneatus, the vestibular nerve via Deiter's nucleus and from the olive of the opposite side. The functions which they subserve point to the deduction that the gross inco-ordination and asynergia observed clinically were due to this injury, in spite of the fact that the post-mortem findings appeared to suggest some attempt at compensatory hypertrophy of the opposite cerebellar connection.

This case was discussed and the specimen shown at a meeting of the Midland Division of the British Medical Association in Birmingham in December, 1931.

J.—Ophthalmic Department.—Report by Mr. E. B. ALABASTER, M.R.C.S., D.O., Visiting Ophthalmologist.

An attempt has been made during the year under review to investigate the ophthalmic conditions occurring in psychotic patients, and to correlate some of the results with the work done in other departments.

The cases seen were selected from amongst a variety of the patients, and did not comprise as a routine all new admissions. The total cases examined amounted to 219.

An epitome of the findings is as follows :—

Pupillary changes were present in 80 cases, retinal changes in 32, lesions of the optic nerve in 47, errors of refraction in 54, defective extra-ocular muscles in 14.

The examination was as full as possible and only in 42 instances was it rendered incomplete through faulty co-operation. It has been possible to correlate the ophthalmological findings with those found in other departments in the cases seen at one of the hospitals. Thus the eye conditions found in 111 cases have been correlated later with the results of the Wassermann tests in the blood and spinal fluids and the presence of focal septic disease.

All cases showing pupillary retinal, vessel and optic nerve lesions were extracted from this group of 111 cases, and together they totalled 80 cases.

Of the pupillary cases there were 17 men and 16 women. Of the retinal vessel cases there were 10 men and 12 women. Of the optic nerve cases there were 13 men and 11 women. In one case only no sepsis was

found. This was one in which the pupillary reaction, although present was judged to be reduced. In this case the Wassermann test in the blood was also negative.

In 79 cases out of the 80 sepsis was found in the neighbourhood of the nose and mouth.

In 16 cases sepsis was found elsewhere, but only in one case did it occur alone without other septic changes in the head, and even in this case it was questionable. Positive Wassermann findings were found in only 20 cases, and it is interesting to note that, of the optic nerve lesions noted in the women, no case with a positive Wassermann was found and in the men only 3 out of 13 were positive. In many of these discs, however, it should be mentioned that the changes were only slight, and considerable difficulty was experienced in certain instances in making a decision as to whether the changes seen were pathological. The greatest number, 6 out of 10, of positive Wassermann findings was found amongst the men with lesions of their retinal blood-vessels.

In all, they consisted of sclerosis.

Amongst the women, however, only 2 out of 12 gave a positive Wassermann, while the changes in the vessels were apparently the same.

It would appear as though something more than a positive Wassermann were required to produce lesions of this nature in the eye and that that something was sepsis.

Whether this is so or not, I cannot say, but it seems likely that a very close association may exist between septic changes occurring in the head and lesions of the eye.

II.—FROM THE CARDIFF CITY MENTAL HOSPITAL.

General Report.—By Dr. P. K. McCOWAN, M.R.C.P., D.P.M., Medical Superintendent.

A.—*Continuous Bath Treatment.*

As continuous baths are used extensively in this Hospital for various psychotic conditions, it appears appropriate that some reference should be made here to the results which we have obtained from this form of hydrotherapy. For the present report I am basing my remarks chiefly on the work which has been carried out on the female side of the Hospital during the past three years, during which time the treatment has been carried out by the same medical officer, viz., Dr. M. L. M. Northcote.

The usual practice is for the patient to be put in the bath at 7 a.m., and to remain there until return to the ward at 5 p.m., breakfast, lunch, dinner, and usually tea having been served in the bath in the meantime. For one reason or another a shorter period in the bath may be considered advisable, when the session is from 7 a.m. to noon, or from 1 p.m. to 5 p.m., thus avoiding dinner being given in the bath.

There are five baths in more or less constant use on each side of the Hospital. It has been found that a gramophone is a very useful adjunct to the hydrotherapy department, tending towards an atmosphere of peace, when played at appropriate times throughout the day. The reasons for this are probably different in different patients; certainly the reasons given by them differ, depending chiefly on the type of case. Thus, one patient will say she finds it soothing; another that by closing her eyes and listening to the music she can go to sleep in the bath; others refer to it as "jolly," while others point out that it breaks the monotony.

The results obtained in the different types of psychoses treated were as follows :—

Type of Psychosis.	Nos. Treated.	Improved Physically and Mentally.	Improved Mentally only.	Improved Physically only.	Un-improved.
Recent Mania	49	32 (63%)	1	9	7
Retarded Depression ...	3	3 (100%)	—	—	—
Agitated Depression ...	8	5 (62%)	—	2	1
Agitated phase in Chronic Melancholia	3	2 (66%)	—	1	—
Toxic Exhaustive	7	3 (43%)	—	2	2
Excitement in Chronic Schizophrenia	42	15 (35%)	1	19	7
Excitement in recently admitted Schizophrenia	19	8 (42%)	1	5	5
Catatonic Stupor	7	4 (56%)	1	—	2
Benign Stupor	4	3 (75%)	—	1	—
TOTAL	142	75 (53%)	4	39	24

The above table shows that 142 female patients were treated in the period under review, and that, of these, 75, or 53 per cent., showed some improvement in their mental and physical conditions as a result of the hydrotherapy. No attempt is made here to subdivide the cases according to the degree of their improvement; but no case has been included in this column unless the medical officer in charge of the patient was thoroughly satisfied that definite improvement had accrued from the bath treatment.

The percentage figures in groups consisting of only a few patients are of no value, but are included here for the sake of completeness. It must also be understood that not every case of the psychoses mentioned can be considered a suitable candidate for hydrotherapy; so that the cases are very much selected, and, therefore, it is not implied that the percentages connote the number of any particular psychosis which would benefit by this treatment. Little importance is attached to the columns indicating patients who benefited in physical health only. In many cases this improvement was slight, and in none was it felt that the bath treatment was justified because of any physical improvement which occurred.

It will be noted that excitement in schizophrenia has been divided into that in chronic schizophrenia and that in recently admitted schizophrenics. It is appreciated that it would probably have been more informative to have made the latter group recent schizophrenics, but the method employed proved much more convenient.

The following table summarizes in days the time spent in the baths by the patients, the minimum time being the shortest period any patient of that particular group spent in the bath, the maximum being the longest for any one patient, and the average being the average for all patients of the group. In some of the longer periods, short intervals of a few days without baths were given where considered advisable.

It will be noticed from this table that quite prolonged periods in the bath are essential in the majority of cases. Most of the cases who only received treatment for a week or less could be divided roughly into two classes: those who were not likely to benefit by the treatment, and chronic schizophrenics who had passed into an excited phase which cleared up quickly in the bath. There are no outstanding differences to record as regards the male side, except that there would appear to be rather fewer recent male admissions who call for this form of treatment, with the result

that the baths are more frequently available for chronic schizophrenics than is the case on the female side.

Type of Psychosis.	Minimum Days.	Maximum Days.	Average Days.
Recent Mania	3	84	37
Retarded Depression	10	52	24
Agitated Depression	3	120	50
Agitated Phase in Chronic Melancholia ...	44	78	58
Toxic Exhaustive	12	60	37
Chronic Schizophrenia	4	157	46
Recently admitted Schizophrenia ...	6	130	31
Catatonic Stupor	8	100	44
Benign Stupor	6	100	30

Although of secondary importance, a point which is always worthy of remark in discussing hydrotherapy, is the advantage which accrues to the other patients in the ward in which the average patient for bath treatment resides. Such patients are usually of an interfering, restless type while in the ward, and, consequently, prove disturbing to their fellow patients. When it is further remembered that the ward in question is usually the reception ward, the importance of the removal of disturbing elements becomes doubly important.

B.—Sunlight Treatment.

Light therapy is in constant use at this Hospital, and for the purpose of this report the statistics used have been taken from figures supplied by the female side of the hospital during the past three years.

I remain of opinion that part, at least, of the beneficial results obtained with this treatment are due to psychological effects in suggestible patients. In appraising the results of light treatment, it is impossible to differentiate how much of any improvement shown by any particular patient is due to this treatment, as practically without exception other treatments are going on at the same time, e.g., occupational therapy. What has been done in this report is merely to record improvement during treatment, irrespective of cause; but I should like to state that my colleagues and myself are satisfied that the light therapy played some part in the majority, if not in all of these improvements, a statement freely corroborated by most recipients of the treatment.

Treatment consists of exposure to three tungsten cored carbon rods for two to three hours on alternate days. The department is available for females every morning, and for males on five afternoons a week.

The results obtained in the different types of psychoses treated were as follows:—

Type of Psychosis	Nos. Treated.	Improved Physically and Mentally.	Improved Mentally only.	Improved Physically only.	Un-improved.
Recent Mania	17	13 (76%)	—	2	2
Retarded Depression	69	56 (81%)	1	—	12
Agitated Depression	6	—	—	1	5
Benign Stupor	16	12 (75%)	—	2	2
Catatonic Stupor	5	2 (40%)	1	1	1
Schizophrenia	13	4 (30%)	—	5	4
Toxic-Exhaustive	15	11 (73%)	—	2	2
Neuroses	3	2 (66%)	—	1	—
Miscellaneous Group	18	8 (44%)	—	3	2
TOTAL	157	108 (67%)	2	17	30

The above table shows that 157 patients were submitted to treatment during the three years under review, and that 108, or 67 per cent., benefited to a greater or less degree from the treatment. It will be noted that no case of agitated depression benefited. These patients tend rather to become more agitated in the atmosphere of the light department. In this respect, I should like to emphasize the fact that none of the cases of mania submitted to treatment were in any way acute; but cases of hypomania and improving cases of a more severe type are suitable for this therapy.

I have omitted from the above table a group of 43 schizophrenics who were given light treatment purely on the grounds of physical ill-health, many, in fact, during convalescence from sulphur therapy. Of these 43 no fewer than 37, or 86 per cent., appeared to benefit from the treatment.

As in the continuous bath report, the duration of treatment is shown in the following table in days as minimum, maximum and average periods for each group of psychoses.

Type of Psychosis	Minimum Days.	Maximum Days.	Average Days.
Recent Mania	4	180	52
Retarded Depression	5	150	58
Agitated Depression	4	65	29
Benign Stupor	5	97	49
Catatonic Stupor	14	180	75
Schizophrenia	2	110	45
Toxic-Exhaustive	6	188	62

In the case of sunlight treatment, the patients who only received a few days' treatment were largely those who were showing signs of being unlikely to benefit by this form of therapy.

C.—*Biochemical Laboratory.* Director: Dr. J. H. QUASTEL.

1. *Narcosis and Oxidations.*

As stated in the last report, it has been found that when brain tissue, obtained from various animals, is exposed to narcotics, there results a considerable diminution in the velocity of oxygen uptake. This applies to all narcotics tested, and with the dialkylbarbituric acid series the diminution is greater than 30 per cent. when concentrations are used which are of the same order as those required to induce narcosis in animals. With such small concentrations of narcotics the oxygen uptake of brain is much more affected than that of living yeast. The narcotics primarily inhibit the oxidation by the brain of substances important in carbohydrate metabolism; viz., glucose, lactic acid and pyruvic acid. The oxidations of succinic acid and p-phenylenediamine which are freely oxidized by the brain are unaffected by small concentrations of narcotics. A definite parallelism has been found to exist between the intensity of narcotic power and the magnitude of the inhibitive effect of the narcotic on the oxidation by brain of glucose and lactic acid. Among drugs of the same chemical type (hyoscine and atropine, luminal and veronal, chloral and paraldehyde), those with the greater narcotic power have the greater inhibitive actions. The brains of chloroformed mice show a diminished ability to oxidise glucose.

It has also been found that narcotics inhibit anaerobic oxidations affected by brain, and it has been proved that narcotics do not interfere with the access or activation of oxygen by brain tissue, but that they compete reversibly with lactic acid for the brain catalysts. The action of the

narcotic appears to be concerned with the mechanisms which involve the activation of glucose or lactic acid as a substrate for brain oxidations and, hence, for the functional activity of the nervous system. The entire evidence supports the conclusion that the narcotic is adsorbed at a nervous centre, the amount of adsorption being dependent on its chemical constitution and on that of the nervous centre, and that, in so doing, it hinders the access of lactic acid to the centre and so lowers the amount of lactic acid available for oxidation. The supply of energy to the nervous centre in question is thus diminished, and a decrease in functional activity—leading to narcosis—ensues.

(J. H. Quastel and A. H. M. Wheatley.—*Proc. Roy. Soc. B.*, 1932, 112, 60.)

(D. R. Davies and J. H. Quastel.—*Biochem. J.*, 1932, 26, 1672.)

2. *Glucose-Insulin Administration in Prolonged Narcosis.*

The results described above led to experiments which showed that carbohydrate metabolism of the liver was also affected by narcotics, and this new finding threw light on the source of toxic by-effects encountered in prolonged narcosis treatment of various forms of mental disorder.

The development of this treatment has been greatly hindered, in spite of its very definite beneficial effects, by the fact that toxic symptoms arise after narcosis has been prolonged for a few days; and the symptoms may be such as to render further treatment with the narcotic inadvisable or dangerous. Consequently, the treatment has to be stopped before there is any chance of an alleviation of the abnormal mental symptoms.

One of the main toxic effects is the production of ketonuria, which was found to occur regularly after prolonged narcosis. This finding confirmed the conclusion, stated above, that carbohydrate metabolism is generally affected by narcotics, and, hence, it was decided to modify the usual procedure of prolonged narcosis treatment by the simultaneous administration of glucose and insulin.

This modification has resulted in the elimination of the ketonuria and other serious complications. Hence, it is possible, with the modified treatment, to use prolonged narcosis with a greater variety of patients and with greater safety than has hitherto been possible.

A preliminary notice of this work, carried out by Dr. J. H. Quastel and Dr. R. Ström-Olsen, has been published in *The Lancet* (March 4th, 1933).

The investigation of the modified treatment from the clinical standpoint is being carried out by Drs. Northcote and Ström-Olsen, and their results will be published later.

3. *Biochemistry and Mental Disorder.*

The Director has summarized much of the work in the laboratory, and has pointed out the fruitful fields of investigation for the biochemist in the psychiatric domain in an article published in *The Lancet*. This article indicates the importance of properly conducted researches along physiological and biochemical lines for the study and treatment of mental disorder.

(J. H. Quastel.—*Lancet*, 1932, Dec. 31st, p. 1417.)

4. *Nitrogen Metabolism in the Psychotic.*

Dr. M. R. Lockwood and Mr. D. R. Davies have published their observations on the nitrogen metabolism of psychotic patients. The statements made in the last report are confirmed. A disordered nitrogen metabolism was found to be associated with abnormal mental states, the disorder being most marked in melancholia. States of stupor and the majority of apathetic hebephrenics show a disorder of a somewhat different type. It seems likely that the change of the nitrogen metabolism from the normal is consequent upon endocrine dysfunction.

(M. R. Lockwood and D. R. Davies.—*Biochem. J.*, 1932, 26, 745.)

5. *Action of Dyestuffs in Catalytic Activities of Tissues.*

The Director has extended his work on the effects of dyestuffs on the catalysts of the living cell to urease—an enzyme which breaks down urea to ammonia.

It was shown that only a certain class of dyes could attack this enzyme. By means of this finding it has been possible to obtain some knowledge of the type of molecule upon which urease can act and of the details of the union between the enzyme and its substrate. The results have a bearing on nitrogen metabolism, which is being investigated in this Hospital.

(J. H. Quastel.—*Biochem. J.*, 1932, 26, 1685.)

6. *Estimation of Phosphorus.*

Mr. D. R. Davies has completed the work with Mr. W. C. Davies on the substances which interfere with the colorimetric estimation of phosphorus in tissues, etc. The work, which has considerable practical importance, shows that there exist substances in the tissues which will interfere, above certain concentrations, in the determination of the amount of phosphorus present.

The explanation for the interference is given in their publication.

(D. R. Davies and W. C. Davies.—*Biochem. J.*, 1932, 26, 2046.)

7. *Glutathione and Carbohydrate Metabolism.*

The Director has found that a substance which plays a dominant role in regulating the carbohydrate metabolism of the cell is the naturally occurring sulphur compound—glutathione. In view of the importance of carbohydrate metabolism in particular for the functional activity of the nervous system, the relation between sulphur compounds and carbohydrate metabolism is being intensively studied. It has been possible to show with yeast and with brain that the extremely toxic action of small quantities of iodoacetic acid is due to the latter combining with glutathione and rendering the latter inert. It has also been shown that glutathione increases the *aërobic* fermentation of yeast to the anaërobic level—indicating the regulating influence of this sulphur compound in the carbohydrate metabolism of the yeast cell.

(J. H. Quastel and A. H. M. Wheatley.—*Biochem. J.*, 1932, 26, 2169.)

These studies are being extended to animal tissues, including the blood. At the same time, studies of glyoxalose activity are being pursued, Dr. M. Jowett acting in collaboration with the Director.

8. *Bromine in the Blood of Psychotics.*

The work of Dr. Zondek and Bier on the bromine level of psychotic patients is being repeated by Dr. Yates, in collaboration with the Director.

D.—*Pathological Laboratory.*

The following examinations were made :—

Urine.—ordinary routine examinations, 858 ; microscopical, 69 ; bacteriological, 42 ; sugar estimations, 62 ; ketones, 12 ; urea concentrations, 21. *Blood.*—Glucose tolerance, 273 ; red and white cell counts, 394 ; white cell counts, 168 ; differential counts, 16 ; bacteriological examinations, 3 ; urea estimations, 34 ; agglutinations, T.A.B. and dysentery, 18 ; examinations for malarial parasites, 58 ; Wassermann tests, 301 ; blood sugars, 46 ; a few Van den Bergh reactions. *Cerebro-spinal Fluid.*—Bacteriological examinations, 2 ; colloidal benzoin reactions, 56 ; cell counts, 56 ; Boltz acetic anhydride reactions, 56 ; globulin reactions, 56 ; Wassermann tests, 56. *Sinus Washings.*—A considerable number of bacteriological examinations were carried out on these. Sputum examinations, 36 ; bacteriological examination of faeces, 51 ; fractional test meals, 4 ; a few pus examinations ; a few throat swab examinations ; a few histological examinations of post-mortem specimens, and specimens obtained from operations.

E.—*Psychological Laboratory.*

Psychological tests are being carried out by Mrs. Henrietta J. Quastel, M.A., on a series of psychotic patients. The tests used so far are :—

- (i) Stanford-Binet.
- (ii) Healy Pictorial Completion II.
- (iii) Porteus Mazes.

F.—*The Psychotic Form of Acute Epidemic Encephalitis. (Clinico-Pathological Report of a Case.)*—By Dr. R. STRÖM-OLSEN, D.P.M., Senior Assistant Medical Officer, and Dr. J. GOUGH, Lecturer in Pathology, Welsh National School of Medicine.

Acute epidemic encephalitis is a disease so protean that an early diagnosis of the more irregular forms becomes a matter of some difficulty. The great variation in the symptomatology of this disease is reflected in the more or less cumbrous classifications of its clinical manifestations, Osler in his text-book giving no less than 14 forms. Von Economo* classifies the symptoms into 3 basic forms—somnolent-ophthalmoplegic, hyperkinetic and amyostatic-akinetic—and a fourth group of “Irregular Forms.” In the latter he includes a purely “psychotic type,” which, up to now, has been quite uncommon. It is of considerable interest, however, to the psychiatrist, in view of its resemblance to other acute mental disorders. In fact, one of the very first cases of encephalitis lethargica in 1916 was brought to the Vienna Psychiatric Clinic under the diagnosis of “amentia with hysterical attributes.”

The following is an illustrative case which was admitted to the Cardiff City Mental Hospital with the symptoms of an acute psychosis.

W.J.C. age 21 years, admitted November 3rd, 1932, suffering from an acute confusional condition.

History.—The family history showed nothing of note.

On leaving school, patient worked as a labourer until age 18; subsequently as a milkman's assistant. No behaviour disorders or psychotic traits had ever been noticed in him. He was of a quiet and reserved disposition, fastidious in habits, and conscientious in his work.

Previous Illnesses.—Patient suffered from tuberculous hip as a child of 9; otherwise, no illnesses. Of normal mental development.

History of Present Illness.—On October 24th, 1932, he complained of headache and feverishness, but continued at his work until October 26th, 1932. On the following day he attended his family doctor, who diagnosed “influenza” and sent him to bed. He became depressed and emotional, complained of headache and abdominal pain, and was afraid to be left alone. On October 29th, 1932, the doctor called and diagnosed the case as “influenza with depression.” He ordered rest in bed on fluid diet. The next day patient had improved and appeared almost his usual self, but on October 31st, 1932, he again became depressed and apprehensive, and was apparently hallucinated, stating that he could see men fighting and hear them shouting. He was afraid to be left alone, as he thought people in the house opposite were going to murder him. On November 1st, 1932 he was more restless and excited. He rushed into the street shouting that someone had struck him and that he was about to be killed. Shortly afterwards he was certified, and sent to the Cardiff City Mental Hospital on November 3rd, 1932.

Condition on Admission.—*Physical State:* Good physique. Toxic appearance. No marks of injury. T. 98.6°. P. 110. R. 18. Heart and lungs normal. The tongue was dry and furred. Sordes present on lips and teeth. Early pyorrhoea. Liver and spleen not enlarged. *Nervous System.*—General restlessness. No involuntary movements. Slight degree of neck rigidity, but no Kernig's sign. Speech and gait normal. *Cranial Nerves.*—Normal. No nystagmus, diplopia or exophthalmoplegia could be discovered during the whole course of the illness. Pupils moderately dilated, equal, and reacted well to light and accommodation. *Sensation.*—Difficult or impossible to test owing to complete lack of co-operation. He complained of headache and

*“Encephalitis Lethargica: Its Sequelae and Treatment,” by C. von Economo. Trans. by K.O. Newman. London: Humphrey and Milford. 1931.

generalized pains in chest and abdomen. *Reflexes*.—The tendon reflexes were present and normal. The plantar reflex gave a flexor response on both sides; and the abdominal reflexes were all present. *Urine*.—Acid. Sp. gr. 1,020. Urates. Trace of albumen. No sugar or acetone. *Blood Count*.—R.B.C., 7,470,000; W.B.C., 16,800; Hb., 100 per cent.; C.I., 0.73. *Wassermann Reaction*.—Negative.

Mental State.—He was admitted in an agitated and excited condition, struggling and shouting when receiving attention. He proved somewhat resistive to physical examination, shrieking out when touched that he was in agony and could not breathe. He stared about him wildly, and at times jumped out of bed in a state of great agitation, probably seeking flight from terrifying hallucinations. Occasionally he was quite calm and controlled, and answered questions relevantly, but these lucid intervals were present only in the early stage. He was generally extremely noisy and restless, his talk frequently being accompanied by panting, grimacing and wild gesticulations. He had to be fed, and his habits were faulty. The stream of talk was quite incoherent, but accelerated. His incoherence at times amounted to verbigeration, and clang associations were abundant. His mood changed rapidly from noisy elation to terror-stricken fear, but during the intervals between his turbulent outbursts he appeared calm and indifferent. His endeavours to explain himself were largely confused, but he appeared chiefly preoccupied with auditory and visual hallucinations of a persecutory nature. He heard voices threatening to strangle him and was constantly seeking protection from visions of men who approached him with murderous intent. Owing to his confusion and clouding of consciousness, he was disorientated and grossly amnesic, and mistook the identities of those around him.

Progress of the Case.—He was put on a fluid diet, and was given saline and glucose enemata owing to the difficulties of feeding and lack of fluid intake (as shown by the relative polycythaemia). Morphia and hyoscine were given twice or thrice daily to combat the restlessness. He ran an irregular pyrexia; the temperature rose in the later stages to a maximum of 104.4°; and the pulse steadily weakened in spite of all supporting treatment.

For a time the condition was regarded as a post-influenzal toxæmia, and the absence of definite neurological signs seemed to support this. In view, however, of the headache, delirium and slight neck rigidity, a meningeal or cerebral infection was suspected, and on November 11th, 1932, a lumbar puncture was performed. The fluid escaped under increased pressure, was clear, and formed no coagulation on standing.

C.S.F. Findings.—Cells: 38 per c.mm., and mainly small lymphocytes; two or three large lymphocytes seen; no polymorphs. *Ross-Jones*: positive. *Acetic Anhydride*: negative. *Colloidal Benzoin Reaction*: 001112222000000. No tubercle bacilli found. These findings, in conjunction with the clinical picture, indicated a diagnosis of acute encephalitis. On November 11th, 1932, the patient developed a terminal parotitis, and died on the following day.

Pathological Findings.—*Naked eye examination*: The meninges were congested, and the grey matter of the cerebrum showed distinct pink coloration.

Microscopic examination.—The pia-arachnoid showed a slight degree of infiltration with small round cells. The brain substance showed a well-marked inflammatory lesion characterized by cellular infiltration of the vessel sheaths, typical of that seen in acute epidemic encephalitis. The inflammatory cells were for the most part small and round with darkly staining nuclei. The lesions were confined to the grey matter. They were most pronounced in the basal ganglia. The superior part of the optic thalamus in particular was very severely affected, while the inferior part showed only slight changes. The mid-brain showed several foci of perivascular infiltration, but none of these affected the oculomotor nuclei. The medulla oblongata and the cervical region of the spinal cord showed no lesions. The frontal lobe of the cerebrum showed very marked perivascular infiltration both of vessels deep in the grey matter and also of the vessels near the surface, but those in the sulci were not affected. No lesions were found in any other part of the cerebral cortex.

Comments.

Clinically, this case presented the features of an acute psychosis, resembling a toxic-exhaustive state. Neurological signs were absent, and the only clue to a correct diagnosis was the findings in the cerebro-spinal fluid. Psychotic forms of acute epidemic encephalitis are rare, and the pathological histology on this case has been fully investigated in order to determine whether there was anything in the distribution of the lesions to account for the unusual symptoms. The main abnormal feature was a

marked involvement of the frontal lobes. This would appear to be quite rare, as Boyd¹ found no such lesions in his series of cases, though Delater and Rouquier² report a psychotic case in which the pathological changes were confined to the cortex and meninges.

The extreme confusion, amnesia and disorientation may possibly be accounted for by this cortical involvement, but the auditory and visual hallucinations could not be explained in a similar way, for no lesions were found in the temporal and occipital lobes. The significance of the frontal involvement is thus not very apparent, as undoubtedly the clouding of consciousness, intellectual impairment and hallucinosis could have been toxæmic in origin, which is usually the case in toxic-exhaustive states.

The severe spontaneous pains are readily explained by the intensity of the lesions in the thalamic region, and the absence of ophthalmoplegia and diplopia by the fact that, pathologically, the oculomotor nuclei were not involved.

The main difficulty in the diagnosis of this type of case lies in differentiating the acute illness from influenza, and the liability to mistake the psychosis for a post-influenzal toxæmic state. In this connection, the importance of examining the cerebro-spinal fluid can scarcely be over-estimated.

References.

1. BOYD, W. "Pathology of Internal Diseases." London, 1931.
2. DELATER AND ROUQUIER. "Bull. et Mem. de la Soc. Med. d'Hopit. de Paris," No. 32, 1921.

G.—Incidence of Chronic Nasal Sinusitis and Tonsillitis in the Psychoses.

This work has continued throughout the year, and the findings have been largely confirmatory of those of the two preceding years. All new admissions have been exhaustively examined for the above conditions; and during the year twenty patients have been submitted to operation—8 for nasal sinus investigation; 9 for nasal sinus investigation and enucleation of tonsils; 3 for enucleation of tonsils only.

It is proposed to publish a short note of the work done in *The Journal of Mental Science* in the near future, when the results will be found to differ very materially from those emanating from Birmingham. Our results can be summarized in the statement that nasal sinusitis is present in a small percentage of cases only, but that the majority of these benefit mentally from a clearing up of their sinusitis. It may be added that we have lately examined the nasal sinuses in all autopsies by the method advised by Pickworth. The method is most admirable, but, so far, in 11 autopsies we have found no diseased nasal sinuses.

III.—FROM THE WEST RIDING MENTAL HOSPITAL, WAKEFIELD.

A.—*General Report on Treatment Centre.*—By Professor J. SHAW BOLTON, D.Sc., F.R.C.P., Medical Director.

1. *Out-Patient Department.*

The work of the department continues to increase, and there is reason to associate this with the operation of the Mental Treatment Act of 1930.

No. of attendances in 1930, 1,216; 1931, 1,377; 1932, 1,543.

	Males.	Females.	Total.
Out Patients on Register on December 31st, 1931	80	110	190
Struck off Register	23	36	59
Admitted during 1932	33	53	86
Remaining on the Register on December 31st, 1932	84	131	215

Arrangements have been completed for the opening in January, 1933, of a psychiatric clinic at the Clayton Hospital, Wakefield, for such cases as prefer to attend at a general hospital.

2. *The Operating Theatre and Recovery Rooms.*

Fourteen major and 14 minor operations were performed in the theatre, and upwards of 150 minor treatments including dental extractions were carried out. The six clinical rooms are in constant use for routine medical and minor surgical purposes.

3. *Sun Ray Department.*

Local and general treatments, 445 in number, were given to 51 patients.

4. *X-Ray Department.*

Three hundred and ninety-three photographs have been taken.

B.—*General Laboratory Report.*—By PROFESSOR J. SHAW BOLTON, D.Sc., F.R.C.P.

1. *Widal Examinations for Typhoid and Dysentery of all new admissions.*

Widal examinations for typhoid and dysentery of all probationer members of the staff and of all new admissions have been continued. Whilst the figures for the new admissions show little change from those of previous years, it is interesting to note that only one member of the probationary staff gave a positive result.

Admissions.					Positive Flexner.	Positive Typhoid.	Negative.	Total.
Male	...	...	...	...	4	2	189	195
Female	...	...	...	...	5	—	191	196
TOTAL					9	2	380	391
Probationary Staff—								
Male	...	...	...	...	—	—	13	13
Female	...	...	...	...	1	—	56	57
TOTAL					1	—	69	70

2. *Routine Work of the Laboratory.*

A summary of the 4,610 routine examinations carried out in the Laboratory is given below:—

Bacteriological examination of faeces, 2210; Widal's, 1226; histological preparations, 210; urines, 163; milk, 126; Wassermann reactions c.s.f., 92; blood, 80; Lange reactions, 91; blood flocculation reactions, 40; post-mortem scrapings, 49; blood counts, 32; sputa, 30; blood cultures, 20; faeces for T.B. and occult blood, 36; pus, 15; skin scrapings, 13; swabs, various, 25; Pleural effusions, 6; V. den Bergh, 5; auto-genous vaccines prepared, 30.

Animal Inoculations.—One hundred and eleven animal inoculations have been performed during the year, 108 guinea pigs and 3 rabbits being required for this work.

Milk Analyses.—During the year, 102 milk samples have been examined and in 5 instances the milk was found to be tuberculous.

Cultivation of Bacillus tuberculosis.—Several attempts to obtain cultures of *B. tuberculosis*, by the Corper method, from specimens of faeces and milk, have been unsuccessful. Whilst the method usually gives good

results with specimens of sputum, pus, urine and scrapings from lungs and glands, the presence of spore-bearing acid-resisting organisms and moulds in specimens of faeces and milk renders the method ineffective for those specimens.

Pathological Museum.—During the year several new interesting specimens, mounted and dry preparations, have been added to the collection.

3. *Diploma in Psychological Medicine and student training courses.*

One candidate obtained the D.P.M. of the University of Leeds during the year, and four candidates are engaged in the course of training for Part I.

C.—*Asylum Dysentery and Allied Infections (Fourteenth Post-War Report).*—

By Professor J. SHAW BOLTON, D.Sc., F.R.C.P., Dr. M. J. McGRATH, D.P.M., and Mr. A. L. HOWDEN, F.R.M.S.

1. *Enteric Fever.*

Two cases of enteric fever have occurred during the year, in female isolation Ward 21. One of the cases recovered and one died.

Both cases occurred during the month of July, on the 4th and the 9th respectively. Owing to the presence of four active typhoid carriers in Ward 21, it is probable that the first case, M.H.B., was infected owing to a lapse on the part of the nursing staff and the resulting breakdown in the special methods of isolation. Whether the second and fatal case, A.E.F., which occurred five days after the first one, was due to the same cause, or to direct case infection, it is impossible to state.

It may be mentioned that the second case, A.E.F., had contracted dysentery two months previously and was in a low state of health. Details of the cases are given below.

1. July 4th, 1932. M.H.B., age 43. Ward 21. Admitted April 27th, 1932. *Bacillus Typhosus* isolated from blood and splenic cultures.

2. July 9th, 1932, A.E.F., age 41. Ward 21. Admitted November 26th, 1929. *Bacillus typhosus* isolated from blood culture.

Patient died on August 1st, 1932. Post mortem—The small intestine showed many Peyer's patches, some of which were almost perforated. The large intestine was considerably thickened and almost denuded of mucous membrane in the lower two thirds of the descending colon. The spleen was large and soft and the gall bladder much distended. *B. typhosus* was isolated from the bile, spleen and small intestine.

2. *Typhoid Carriers.*

One new female typhoid carrier was detected during the year. We now have five carriers isolated in Ward 21, and a summary of the weekly bacteriological examinations is given below.

1. A.E.C., age 81. Admitted November 12th, 1903, detected as a typhoid carrier January 19th, 1928. Number of specimens examined, 54. Number from which *Bacillus typhosus* was isolated, 40. Number negative for *B. typhosus*, 14.

2. A.B., age 74. Admitted March 24th, 1896, detected as a typhoid carrier October 16th, 1930. Number of specimens examined, 52. Number from which *B. typhosus* was isolated, 48. Number negative for *B. typhosus*, 4.

3. E.M.R., age 55. Admitted August 13th, 1925, detected as a typhoid carrier October 23rd, 1930. Number of specimens examined, 52. Number from which *B. typhosus* was isolated, 36. Number negative for *B. typhosus*, 16.

4. E.L., age 58. Admitted November 5th, 1915, detected as a typhoid carrier December 2nd, 1930. Number of specimens examined, 54. Number from which *B. typhosus* was isolated, 41. Number negative for *B. typhosus*, 13.

5. J.W., age 40. Admitted December 4th, 1917, detected as a typhoid carrier September 17th, 1932. Number of specimens examined, 28. Number from which *B. typhosus* was isolated, 7. Number negative for *B. typhosus*, 21.

Carrier No. 5, J.W., contracted typhoid fever on September 16th, 1926, and recovered. Bacteriological examination of the faeces was continued at weekly intervals for three months after recovery and as consistently negative results were obtained the patient was regarded as free from infection. On February 13th, 1929, J.W. contracted dysentery—Flexner "V"—and recovered. Again weekly bacteriological examinations were carried out for three months. Approximately 33 months later, on September 17th, 1932, whilst a search for a dysentery carrier was being carried out, J.W. was found to be excreting typhoid bacilli. Only two typhoid colonies were obtained on the three MacConkey plates inoculated from her faeces. From September 17th, 1932 to December 31st, 1932, 28 specimens of faeces have been examined from this patient, and on 7 occasions only has *B. typhosus* been isolated. This case seems to illustrate the importance of prolonged bacteriological control of all cases of enteric fever.

Whilst it is usual for typhoid carriers to excrete typhoid bacilli regularly for considerable periods, as evidenced by the results of the examinations of our four other carriers, J.W., by her intermittent excretions of typhoid bacilli, closely resembles the condition usually exhibited by dysentery carriers.

It is interesting to note that no case of enteric fever occurred in Ward 22, although J.W. was transferred to the Ward after her recovery from dysentery and she had apparently been excreting typhoid bacilli intermittently up to her detection as a typhoid carrier.

It is probable that freedom from cases of enteric fever in the Ward was due, in no small measure, to the cleanly habits of J.W.

Non-motile typhoid bacilli.—In a previous communication, we reported the isolation of a non-motile form of *B. typhosus* from one of our former typhoid carriers. We then stated that all attempts to produce motility by frequent subculturing had failed.

Cultivation of this organism in the semi-solid medium recommended by Kirkpatrick and Colquhoun, has resulted in the isolation of an active motile culture which has retained its motility after several months of subculturing on the ordinary media. Prior to cultivation in the semi-solid medium, hanging drop preparations of this organism failed to exhibit any form of motility.

3. *Dysentery during the year 1932.*

No case of dysentery occurred in the male Wards of the Hospital. Seven cases of dysentery, all females, occurred during the year and one female dysentery carrier was detected. All the cases were non-fatal.

Three of the cases, one being a recurrent, occurred in the dysentery isolation wards.

The remaining cases occurred in the chronic female block, as follows:—

Ward 29, two cases and one carrier; Ward 28, two cases.

A summary of the cases and the bacteriological examinations are given below:—

1.—February 2nd, 1932. R.A.N., age 57. Ward 23.* Admitted October 25th, 1930. *B. dys.* Flexner "Z" isolated.

2.—February 14th, 1932. M.C., age 47. Ward 22.* Admitted November 29th, 1924. Recurrent case. *B. dys.* Flexner "V" isolated.

3.—May 5th, 1932. H.N., age 53, Ward 29. Admitted May 6th, 1915. *B. dys.* Flexner "Z" isolated.

*Dysentery isolation wards.

Water—We confirmed the serious contamination of the hospital reservoirs which occurred on May 22nd, as the result of flood water entering the air vents, and during subsequent tests it was found that slight contamination was present following a rainy period, indicating the probability of surface pollution. The last test (December 23rd) showed absence of *B. coli* in 50 c.c.'s.

Milk.—The tests have shown that on delivery, the farm milk is well within the standard of Grade "A."

We consider these periodical examinations to be extremely useful as an indication of the care used in handling the milk, particularly when patient labour is utilized.

B.—Clinical.

X-Ray Department.—The work of this department is invaluable, and continues to be carried out by Dr. Elisabeth Sykes:—

X-Ray Department—

	Males.	Females.	Staff	Total.
Patients X-Rayed ...	70	68	35	173
Screening only, 5 cases				
Number of films taken, 280				

Ultra-Violet Ray Department.—Patients treated, 10; Number of attendances, 424.

Diathermy and Radiant Heat.—Patients treated, 6.

Dentist's Department.—The visiting Dentist, Mr. W. J. Law, L.D.S., attends to the work of this department:—

	Number of Patients.	Extractions.	Various.
Males	221	404	60
Females	183	448	39
TOTAL	404	852	99

Mr. Law has carried out an investigation of the teeth of patients suffering from the after-effects of encephalitis lethargica. His observations on his work are as follows: Some of the cases of encephalitis lethargica presenting for dental treatment at the South Yorkshire Mental Hospital showed dental caries of such an unusual character, that it was thought worth while to examine all the cases in the institution from this point of view.

Twenty-six patients were thus examined and the condition was found in nine of them (28.8 per cent.).

All the affected patients were young and all of them exhibited Parkinsonian symptoms, though not all of the Parkinsonians were affected.

The condition consists of a caries so rapid and so widespread as to merit the term devastating. Sometimes one side only of the mouth is affected, but more often all of the teeth are attacked simultaneously. Unlike normal decay which begins more often on the interstitial surfaces of the teeth this form begins on the buccal and labial sides and spreads rapidly over the cervical two-thirds of the crown producing large compound cavities which soon involve the whole of the dentine.

A closer examination of the affected teeth showed the remaining enamel to be acid-eroded on all its surfaces for about two-thirds of the length of the crown clearly indicating that this part had been bathed in acid and very closely resembling the condition produced in the classical "Artificial Caries" experiments of Miller. This in its turn suggests that the affected area has been kept continually in contact with fermenting carbohydrate food material.

And this proves to be the case. All the patients exhibited "Parkinsonism." All had an excessive flow of saliva even when controlled to some extent by the drugs (Stramonium. Luminol.) used for other purposes; and were too inert to use the lips and cheeks in the normal manner to remove the food debris remaining after a meal. Thus those parts of the teeth less easily cleaned become rapidly involved while the self-cleansing surfaces remain intact.

As a contribution to the cause of caries this may seem to be somewhat inconclusive, but it does provide another proof that the fundamental theory of Miller is correct. "That all caries is due to carbohydrate stasis and fermentation."

Treatment of General Paralysis.—The treatment by induced malaria has been continued during the year:—

Total number of cases treated since 1924–1932 is 234—194 males and 40 females.

Cases treated during the year 1932, males 16 and females 2, a total of 18.

The number of cases showing improvement such as to justify discharge is 75—males 69 and females 6.

Treatment of Post-Encephalitic Cases.—Dr. F. T. THORPE, D.P.M.

All Parkinsonians continue to derive much relief from the administration of Pil. Ext. Stramonii Sicc. U.S.P. 0.125 gram (2 grains). This treatment was commenced in June 1930, and an optimum dose varying from 3 to 9 pills daily has been maintained without any apparent untoward effects.

Special Work.

1. *Report on some investigations carried out during the year in connection with cases of Chronic Epidemic Encephalitis.*—By Professor A. J. HALL, M.D., D.Sc., F.R.C.P., Consulting Physician to the Mental Hospital.

Oculo-gyric Attacks.

These, which occur in about 15 to 20 per cent. of all Parkinsonians, are exceedingly troublesome to the patient. Although not as a rule causing pain they may, at times, be quite distressing. Their cause and nature are obscure. Hitherto no satisfactory line of treatment has been forthcoming.

It was therefore determined to try the effects of various therapeutic agents under conditions in which accurate observations of the results could be kept. This is by no means easy in cases of this kind, because in the first place the incidence of attacks is, in many cases, very irregular and intermissions of considerable length are not uncommon; and secondly, the Parkinsonian is so self-centred and so suggestible, that an increase or diminution in the attacks is easily brought about by surrounding circumstances of all kinds. In any attempt to assess the value of a specific reagent it is therefore essential:—

- (1) To know the natural incidence of attacks in the particular case when not treated at all.
- (2) To administer the specific reagent without its object being known.

The former can only be satisfactorily carried out in an institution where the patients are under observation night and day. The latter is not easy to do anywhere. It was decided to test the specific reagent on one at a time. For this the case was selected in which attacks were most frequent and most severe.

History of case.—R.W. male, age 25.—Severe Parkinsonism. Oculo-gyric attacks usually occur at about 7.30 or 8 a.m. (i.e., about 1½ to 2 hours after getting up) and last for one to two hours.

frequent as before. Not only so, but they seemed, if anything, to be somewhat more severe in character. Curiously enough when the Ephedrine was stopped, the attacks also stopped, and indeed for a period of 22 days.

Thus: Record of weekly incidence of attacks when Ephedrine had been stopped. No specific treatment substituted.

1932	Week ending	No. of attacks
August	13th	—
"	20th	—
"	27th	2
September	3rd	3
"	10th	3
"	17th	3
"	24th	—
October	1st	1
"	8th	—
"	15th	2
"	22nd	2
"	29th	3
November	5th	2
"	12th	1
"	19th	3
"	26th	1
December	3rd	2
"	10th	—
"	17th	2
"	24th	—
"	31st	—
		<hr/> 30 <hr/>

Actually, the interval of freedom from attacks (viz. 22 days) which followed within a week of stopping the specific drug is the longest in our records of this case.

It is therefore evident that in this particular case, unless any given substance either :—

- (a) Produces an interval of complete freedom longer than three weeks, or
- (b) continues to keep down the number of attacks at its minimum for more than six or eight weeks, or
- (c) causes considerable lessening of the duration and severity of the attacks themselves,

it cannot be said to have had any material influence on the condition.

Ephedrine (gr. $\frac{1}{4}$ t.d.s.) so far as it has been tried in this case, has failed to produce any one of these effects. The attacks in the case of "W." were just as severe and as long when under its influence as they were previously.

Investigations of other therapeutic agents on similar lines, are being carried out.

N.B.—It may be added that the negative results with Ephedrine here shown under conditions which allowed of careful observation, confirm the writer's experience at his out-patient clinic at the Royal Hospital, where it has been tried in a considerable number of Parkinsonians suffering from Oculo-gyric attacks. In them, however, the strict conditions laid down at the beginning of the Report could not be observed.

Movements of the Eyelids in Parkinsonians (Blinking).

The fixed stare of the Parkinsonian has long been recognized. Whilst this is in part due to absence of movement in the facial muscles, it is increased by the absence of frequent blinking of the eyelids which, in normal persons, occurs at short intervals.

An investigation on the actual rate of blinking in Parkinsonians is being carried out at the present time and will be reported more fully at a later date.

The records so far obtained, show that when the Parkinsonian is reading, the length of interval between consecutive blinks may be extraordinarily long. In one or two cases it was more than four minutes, and quite often more than one minute. When in active conversation the interval between blinks is often as long as half a minute.

Different cases of Parkinsonism, however, differ considerably in this respect.

I wish to express my thanks for valuable help in this work to Dr. Thorpe, Third Assistant Medical Officer and Pathologist, and also to Nurse Spooner for his careful record of the attacks over long periods. These containing details of each attack which are of considerable interest and value.

2. *Report of Work.*—By Dr. ELIZABETH COWPER EAVES, D.P.M., Hon. Neuro-Pathologist to the Mental Hospital, and MARGARET M. CROLL (The Physiological Dept., University of Sheffield, and The South Yorkshire Mental Hospital, Sheffield).

The Human Pituitary, with especial reference to the Posterior Lobe and the presence of Nerve Fibres.

It has been shown previously by M. M. Croll that in the pituitary of the rabbit there are nerve fibres supplying the cells of the pars intermedia.

Some workers erroneously assume that the wealth of fibres which may be demonstrated in the posterior lobe of the human pituitary necessarily consist of nerve fibres.

As it is essential to exclude the staining of neuroglial fibre and connective tissue a number of different variations of technique in impregnation with silver salts of the human pituitary have been tried. The method which has been found successful is a modification of the Brelschowsky technique devised by the writers.

An examination of about 70 human pituitaries has shown that the cells of the pars intermedia frequently extend into the substance of the posterior lobe, and where this is so, nerve fibres ending on the cells have been demonstrated, the nerve endings being of two kinds. Besides fibres supplying the cells of the pars intermedia there are fine plexuses of fibres round the vessels in the posterior lobe, in the stalk, and in the adjacent hypothalamic region.

Nerve fibres enter the posterior lobe by the stalk, and also on the posterior surface of the posterior lobe. There are no nerve cells in the latter.

In the anterior lobe—unlike the posterior lobe—nerve fibres ending on the cells have so far not been demonstrated with certainty owing to the connective tissue fibres between the groups of cells.

Epidemic Encephalitis.

The work on the pathology of chronic epidemic encephalitis, based on the examination of 15 brains, has not yet been put into a form suitable for publication, owing to the development of several side issues, for example : (1) cases with pathological changes slightly resembling those in epidemic encephalitis but with no suggestive clinical history ; (2) cases with some symptoms similar to epidemic encephalitis, but with a different kind of pathological lesion. This work is being continued.

Myasthenia Gravis.

In this case there was a rapid clinical history following an onset after a possible infection, both thymus and spleen were greatly enlarged, and in addition to the typical changes in the striped muscles the smooth muscles of the vessels were affected.

In view of the fact that there were changes in the central nervous system, the evidence has been considered as to a possible relationship between myasthenia gravis and epidemic encephalitis, but the incidence of the former disease has not increased during the period during which the greatest number of cases of epidemic encephalitis have occurred in Sheffield. It is concluded that the changes in the nervous system in the case of myasthenia gravis are due to the rapid toxæmia.

Other Nervous Diseases.

Two brains from cases with anomalous changes in sensation are being examined.

As in each instance the pathological change is in the medulla, it is expected that information may be obtained as to the path of sensory impulses in the upper part of the brain stem.

One brain is from a case of posterior inferior cerebellar thrombosis, the other a neuroepithelioma situated in the lower part of the medulla.

C.—Out-Patient Clinics.

The Royal Infirmary Sheffield:—

At the Royal Infirmary, Sheffield, under Dr. A. G. Yates, Physician to the Royal Infirmary, and Drs. Gillespie and Clegg of the South Yorkshire Mental Hospital, Assistant Physicians.

Number of new cases	...	...	...	...	...	122
Number of attendances of old cases	...	...	...	...	...	731
Total number of attendances	...	...	...	...	...	853

Of the new cases.—Recommended by outside practitioners, 61; Royal Infirmary staff, 31; South Yorks Mental Hospital, 30.

Classification of new cases.—Manic-depressive states, 24; dementia præcox, 5; epilepsy, 17; general paralysis of insane, 6; psychoneuroses, 36; other psychoses, 14; involutional cases, 20.

The Royal Hospital, Sheffield:—

At the Royal Hospital, Sheffield, under Dr. E. F. Skinner, Physician to the Royal Hospital, and Drs. Mathieson and Sykes of the South Yorkshire Mental Hospital, Assistant Physicians.

Number of new cases	...	...	...	...	...	92
Number of attendances of old cases	...	...	...	...	...	1,744
Total number of attendances	...	...	...	...	...	1,836

Of the new cases.—Recommended by outside practitioners, 29; Royal Hospital staff, 10; South Yorks Mental Hospital, 50; School Clinic and other Hospitals, 3.

Classification of new cases.—Manic-depressive states, 20; epilepsy, 13; mental confusion, 13; menopausal depression, 10; neurasthenia, 9; primary dementia, 6; imbecility, 4; paranoia, 3; general paralysis of insane, 2; other psychoses and psychoneuroses, 12.

Alma Road Hospital, Rotherham:—

At the Alma Road Hospital, Rotherham, under Dr. G. E. Mould, Physician to the Mental Clinic, and Dr. F. T. Thorpe of the South Yorkshire Mental Hospital, Assistant Physician.

Number of new cases	...	...	...	...	...	35
Number of attendances of old cases	...	...	...	...	...	802
Total number of attendances	...	...	...	...	...	837

Classification of new cases.—Psychoneuroses, 15; melancholia, 8; epilepsy, 3; confusion, 2; mental deficiency, 2; dementia præcox, 1; mania, 1; general paralysis of insane, 1; syringomyelia, 1; Friederich's ataxia, 1.

V.—FROM THE WEST RIDING MENTAL HOSPITAL, MENSTON, LEEDS.

Report of Clinical and Pathological Investigations.—Communicated by
Dr. R. C. WALKER, Deputy Medical Superintendent.

A.—*Routine Laboratory Work.*

The following is a summary of the work carried out during the year:—

Histological.—Pathological tissues, 16; blood films and differential counts, 80.
Bacteriological.—Faeces for typhoid-dysentery group, 80; pathological material from the farm, 30; milk samples, 60; Meinicke reactions, 60; Widal reactions, 200; sputa, 60.
Chemical.—(additional to routine urine examinations). Quantitative urines (sugar etc.), 150; blood sugar, 100; urea, 20; milk (complete report), 30. *Post-mortem examinations.*—88 (72 per cent. of the Deaths.).

B.—*Pyripher in the Treatment of Dementia Paralytica.*—By Dr. JOHN RUSSELL, D.P.M.

During 1932, the 150 direct male admissions included 20 cases of general paralysis. They were all advanced and none showed any tendency to spontaneous temporary remission.

In the first ten months of the year the number was 16, including 2 re-admissions. The stage of the disease in 3 cases was indicated by the occurrence of death within two months of admission, and in a fourth case, within four months. These subjects were at the time of their admission unsuitable for any form of therapy being in the terminal stages of the disease. Of the remaining 10, 1 had received malarial treatment elsewhere without apparent benefit, 1 had had recent erysipelas and septic adenitis, while yet another suffered from gastritis with recurrent vomiting. Of the remainder (7 cases), 2 only might have been considered fit subjects for malaria. In such circumstances it was impossible to maintain a malarial strain and trial had to be made of some other agent. Sulphosin having given inconsistent results in previous cases it was decided to attempt the production of febrile reactions by the use of Pyripher.

Pyripher is a vaccine of the colon bacillus prepared by the firm of H. Rosenberg of Freiburg i Breggau. It is issued in ampoules of graduated strengths ranging from 50 to 5,000 units (1 unit=1,000,000 organisms) and is suitable for intravenous administration. By clinical experiment it is possible to determine the dose necessary to produce the required reaction (104° F.) in a given case.

Five cases were treated. They were all of an advanced type and little was to be expected in the amelioration of mental symptoms. Of the 5, 1 was in a fairly robust state, the remaining 4 were debilitated and would be considered grave risks for malarial therapy. In 3 of these malaria was definitely contra-indicated. On these grounds the series though small is not without interest since Pyripher proved itself a pyretotherapeutic agent capable of fine control and offering a reasonable margin of safety.

Case 1. Age 47. Grandiose type with but little dementia, robust physical condition. The pyrexial peaks were easily obtained, his chart reading:—104.6, 104, 103.9, 104.2, 103.8, 104, and 103.6 with seven successive rigors. It was not necessary to exceed a dosage of 500 units. Following these rigors the patient developed diarrhoea and the treatment was discontinued. The stools were partly formed, there was no blood or mucus. No pathogens were recovered but the blood serum agglutinated the b. typhosus in a dilution of 1/50. It was later found that he had suffered from typhoid fever while in India and had since received prophylactic inoculation against further attacks; that he had always been subject to a "looseness of the bowels during periods of mental excitement." It was clear that his condition was in no way related to the pyretotherapy.

His weight at the commencement of the injections was 161 lbs. and remained constant throughout the whole period. The red cell count was also constant at 4,000,000 cells per cubic mm. and the haemoglobin percentage was unaltered. No mental change is noticeable since treatment and it is proposed to give him a further course of injections.

Case 2. Age 40. Tabeto-paretic with dementia, infection 1916. The treatment was begun immediately following admission when the patient was in a very feeble state. The chart readings were 102.6, 103.8, 102.4, 101.8, 104, and 104, the final optimum reactions being attained by a dosage of only 200 units. (The lower readings in this and the following cases are accounted for by the caution necessary in increasing the dosage). During treatment weight increased from 132 to 139 lbs. and the red cell count increased by 300,000 cells.

Case 3. Age 43. Rapidly dementing, very excited, feeble health. The peaks obtained were 101.2, 102.6, 104.2, 101, 104, 103.6, 103.8 and 103. Maximum dosage 250 units. There was a weight loss of 2 lbs. easily accounted for by his condition of continuous excitement. The red count was unaltered.

Case 4. Age 36. This patient was in poor physical condition. He was rapidly dementing with successions of seizures. His infection was probably congenital as indicated by luetic stigmatae. Peaks of 101.9, 102, 102.4, 104.6, 104, and 103.6 were obtained with a maximum dosage of 500 units. His weight increased by two lbs. and there was an increase in the red cells of 250,000 per cubic mm. The treatment had no effect upon the mental condition or upon the incidence of seizures.

Case 5. Age 57. Excited rapidly dementing type, in poor bodily condition. There were evidences of advanced cardio-vascular disease and aortic regurgitation. The heated urine showed a heavy cloud of albumen. The peaks were 99.2, 103, 102.8, 101.6, 101.4, 102.4, 102.6.

The pyrexial optimum of 104 was not attained and the dose was restricted to 250 units.

During treatment there was an unexpected weight increase of 4 lbs., the red cell count increased by 200,000, and the albuminuria cleared up.

General Remarks.—In no instance did injection fail to produce a reaction ushered in by a definite shivering fit; there was a true rigor, a condition which we have found exceptional in our experience of malarial therapy, and altogether absent in cases treated by sulphosin. The peak was usually reached within 6 hours of the injection and the temperature remained near the maximum for a period 2 to 4 hours. Each reaction was accompanied by a leucocytosis ranging to 25,000 with a decided shift to the left in the Arneith Index. The leucoblastic reaction was not necessarily proportional to the temperature increase; 2 cases, one with a peak of 102.6 and the other 104, giving approximately the same readings during a period of observation.

In all cases the reaction was accompanied by great mental depression. The suicidal phase came on early (with the first rigors in cases 1 and 4 of this series). This consideration seems to render hospital treatment imperative. There was no unusual depression in the intervals.

All cases complained of severe backache and girdle pains during the rigors. The pains appeared to be related to the febrile reaction, although in one case their distribution suggested an exacerbation of lightning pains in a tabetic. The most unfavourable symptoms occurred in case 5, the depression and anxiety (which is a feature of the reaction in all cases) being accompanied by intense nausea. The condition was indicated by pallor, profuse perspiration, relative slowing and weakening of the pulse, and constant, rather alarming retching. The patient did not lose consciousness and could be readily roused. The condition did not respond to the prophylactic administration of gastric sedatives or to the routine exhibition of glucose-containing fluids; it was readily ameliorated by injections of adrenalin. No blood pressure readings were taken in this case.

These cases have been quoted at length mainly to show that the physical condition of the patient remains remarkably constant during treatment, and may even show improvement, as indicated by the weight curves and the red cell estimations. This is obviously a distinct advantage over malarial therapy. The rigors can be timed so as not to interfere with

the patient's rest. Between the rigors there are no untoward effects and the patients can be got from their beds, a useful nursing measure in the prevention of bedsores in emaciated subjects. There is no time lost in commencing treatment since there is no incubation period. Urine examinations show that there is no increase in the load thrust upon damaged kidneys. Compared with sulphosin the reactions are constant and are proportional to the amount injected per patient. There are no localized painful encystments to disturb the patients sleep.

Further cases of more hopeful type are being treated and it is proposed to combine this therapy with tryparsamide.

VI.—FROM THE LANCASHIRE COUNTY MENTAL HOSPITAL, PRESTWICH.

Report on Laboratory Work.—By Dr. DAVID BLAIR, Medical Superintendent.

Following on the preliminary work in 1931 with reference to the incidence of typhoid and dysentery carriers in the hospital (still incomplete), a total of 1,263 specimens of faeces have been examined.

Six females carriers of *B. typhosus* have been isolated and one male carrier of *B. dysenteriae*. In only three of these 7 cases was a previous history of infection obtainable. In the course of this work 947 examinations of blood (for agglutinating power to various organisms) were made.

Among the other investigations made during 1932 were the following :—

Blood counts, 120 ; sputum examinations, 31 ; examination of tissues, 44 ; c.s.f., 25 ; bact. examn. water, 7 ; other bacteriology, 25 ; chemical analysis of blood, etc., 55 ; routine urine examinations, 778.

VII.—FROM THE LANCASHIRE COUNTY MENTAL HOSPITAL, WHITTINGHAM, PRESTON.

Report of Clinical and Pathological Investigations.—Communicated by Dr. A. R. GRANT, Medical Superintendent.

A.—*Routine Laboratory Work.*

The following table summarizes much of the work carried out during the period under review :—

Urines examined, 2,934 ; bacteriological examinations : urines, 40 ; faeces, 433 ; sputum, 154 ; agglutination reactions, 839 ; examination of c.s.f., 418 ; biochemical examinations : c.s.f. (colloidal gold, colloidal gamboge, sugar, protein, cell count, Boltz and Takata Ara in each case), 418 ; blood, 30 ; examination of gastric contents, 16 ; vaccines prepared (courses of treatment), 207 ; Meinicke reactions for syphilis : blood, 606 ; c.s.f., 76 ; blood films examined : malaria, 2688 ; not malaria, 34 ; throat swabs examined, 654 ; blood counts, 357 ; miscellaneous (pus, swabs, etc.), 55 ; pathological specimens cut and stained, 200 ; photographs, lantern slides, etc., 540 ; post-mortems, 78 (44 per cent. of deaths).

B.—*General Report.*—By Dr. C. J. THOMAS, D.P.M., Deputy Medical Superintendent.

Typhoid, Dysentery and Allied Infections.—Agglutination tests have been carried out with the serum of every new admission using Oxford standardized suspensions of *B. typhosus*, Para. A and B, and *B. dysenteriae*, Shiga and Flexner.

Bacteriological investigation of the urine and faeces followed every positive result.

The search for carriers in the new admissions revealed one persistent faecal and urinary carrier of *B. paratyphosus* B, and this case was proved to be the source of infection of 3 others within a few days after admission.

Another patient following paratyphoid fever yielded Morgan No. 1 on

repeated examination of the faeces, which organism has also been isolated in the other cases of enteritis.

A case with the typical clinical picture of a paratyphoid fever yielded *B. faecalis alkaligenes*, an interesting result as the pathogenicity for man of the organism has been held to be doubtful.

Dysentery.—An outbreak of *B. dysentery* occurred in the latter part of the year and 15 cases were notified. The organisms cultured were typed and proved to be *B. dys.*, Y and Z.

Prophylactic Inoculation.—The contacts in both wards were inoculated with an autogenous vaccine prepared from the strains of *B. dys.* isolated. It is interesting to note, although it is not positive evidence of the efficacy of the vaccine, that no fresh cases occurred subsequently.

Diphtheria.—Active immunisation of the whole of the female admission block was performed in September following a small outbreak.

C.—*Brucella Abortus infection*.—By Dr. C. J. THOMAS, D.P.M.

An investigation has been made into the possibility of *Brucella Abortus* being a cause of some of our unexplained pyrexias.

Agglutination tests were made on a series of new admissions as a control. Agglutination tests, together with attempts at culture on pyrexial subjects, failed to reveal that this infection is of anything but negligible importance in patients of this hospital.

D.—*Treatment of General Paralysis*.—By Dr. C. J. THOMAS, D.P.M.

An investigation into the mode of action of the various pyretotherapies is proceeding with special reference to the Arneith Polymorphonuclear count and the histological changes in the blood-forming organs.

The results are to form the subject-matter of a paper to be published in the near future.

E.—*Results of Malarial Therapy in General Paralysis*.—By Dr. B. REID, D.P.M.

Investigations of 230 patients treated with malaria revealed the following conclusions:—

1. Of all patients suffering from general paralysis treated with malaria, 31 per cent. are sent home improved each year.
2. Six to nine years after the treatment with malaria, 12 per cent. of the patients are recovered from their illness and living at home.
3. One to five years after treatment, 24 per cent. of the patients are recovered and living at home.
4. Malarial treatment improves the physical condition of patients even when no mental improvement results.
5. *Expectation of life*.—76 per cent. of patients are living one year after treatment, 50 per cent. four years after treatment, and 22 per cent. nine years after treatment.
6. Malarial treatment used in all cases of general paralysis is not without danger, and 13 per cent. of cases die within one month of inoculation.
7. The progress is best in those patients who have had symptoms of disease present for seven months or less prior to treatment.
8. The cerebro-spinal fluid improves in general paralysis after treatment and may become normal. This improvement usually takes several years to manifest itself. The improvement in the c.s.f. occurs in patients who have improved mentally and equally in those who have not.
9. Re-inoculation with malaria is of no special benefit in the treatment of general paralysis.
10. Malarial treatment has little or no effect on the physical signs present in the nervous system in general paralysis.

F.—*Publications.*

1. "General Paralysis. Results of eight years of Malarial Therapy." By B. REID, M.D., D.P.M. *Journal of Mental Science*, October 1932.
2. "A Flocculation Test for Cerebro-Spinal Fluid." By D. PRENTICE, M.B., Ch.B. *Journal of Neurology and Psychopathology*. Jan. 1932, p. 238.

VIII.—FROM THE LANCASHIRE COUNTY MENTAL HOSPITAL, WINWICK, WARRINGTON.

Report of Clinical and Pathological Investigations.—Communicated by Dr. F. M. RODGERS, O.B.E., Medical Superintendent.

A.—*Laboratory Work.*

(1) *Routine.*—Urices : general 4,755 ; special 227 ; microscopic, 904 ; cerebro-spinal fluids (colloidal gold, Sachs-Georgi, Boltz, globulin, protein, cells), 216 ; bloods : Sachs-Georgi and malarial, 1,023 ; gastric contents, fluids and other, 30 ; bacteriological (vaccines, pus, sputa, swabs, urines, faeces, cultures, and other), 597 ; histological, 11 ; slides, microscopic, pathologic, 586 ; photographs, 507 ; post-mortems, 54 (38 per cent. of deaths). Sent away for Wassermann tests : bloods, 319 ; c.s.f., 204.

(2) *Research by Medical Officers.*—Blood and cerebro-spinal fluid tests : Hopkins-Cole, 201 ; Meinicke (by 12 methods), 4,659 ; Muller (by 5 methods), 2,194 ; Kahn (by 3 methods), 574 ; Sachs-Witebsky (by 4 methods), 1,150.

B.—*Malarial Therapy in General Paralysis.*—By Dr. J. GIFFORD, D.P.M. Deputy Medical Superintendent.

Fifteen cases of general paralysis underwent treatment by primary malarial inoculations, all by transference of infected blood. Two cases received secondary treatment successfully. Four others were malarially inoculated but did not develop the fever ; of which two were primary cases and two secondary. The use of multiple adjuvant therapies has been regularly maintained.

Malarial blood has been supplied to other mental hospitals, general hospitals and a municipal clinic.

C.—*The Incidence and Treatment of Syphilis.*—By Dr. E. J. FITZGERALD.

In 471 consecutive male admissions the incidence of syphilis was 18 per cent. Of these, 11 per cent. were general paralytics and the other 7 per cent. were other forms of syphilis. In 650 chronic cases, 4 per cent. were paralytics and 5 per cent. other forms of syphilis ; 9 per cent. in all.

An extensive trial of stovarsol (190), the acetyl derivatives of oxyaminophenylarsinic acid was made. This drug has the advantage that it can be given by the mouth, but it was found that it had little or no effect on positive serum reactions, and none at all on the spinal fluid. Its toxic effects were by no means negligible, especially in females, and severe dermatitis, optic and peripheral neuritis, and gastro-intestinal symptoms were frequently encountered, in spite of precautions. In some cases of endo-syphilis the Jarisch-Hescheimer reaction was excited. Although it has so far been found valueless as a therapeutic agent, stovarsol may yet have a limited use as a substitute for other provocative measures. Its sodium salt has also been used intravenously, but the results were no more encouraging.

Tryparsamide, on the other hand, is of undoubted use, and should—in our experience—always be given by the intravenous route.

Bivatol has been found the most satisfactory of the bismuth preparations tried.

Extremely good results have been obtained by means of ultra-violet light. For example, 16 cases of malarially treated general paralysis, with persistently positive blood or spinal fluid Wassermanns, some of many years duration, were thus treated; five of these cases also had auto-haemo-injections half an hour after exposure. In this last group, three previously positive fluids became negative, and one blood; the blood of the other four cases showed a diminution in the strength of the W.R. In the eleven cases with the U.V. light only, the blood Wassermann became negative in three and improved in seven. The fluid Wassermann became negative in two cases and improved in seven. Cases were examined two months after treatment.

A useful routine treatment for general paralysis would appear to consist of a diet rich in vitamin A before, and after malaria, the latter being followed by a course of bivatol twice weekly and tryparsamide once weekly for eight weeks, combined with U.V. light with or without auto-haemo-injections, and iodides during the latter part of the course.

D.—*The Sero-Diagnosis of Syphilis.*—By Dr. J. ERNEST NICOLE D.P.M. and Dr. E. J. FITZGERALD.

The investigation begun and reported upon in 1931 has been continued during 1932 and considerably increased in its scope. Up to date over 2,000 cases have been tested by means of a micro-Meinicke, and a controlled series of 500 has been selected for the simultaneous application of numerous tests. The tests under investigation have been the Wassermann (Modified Wyler No. 1 method), the Sachs-Georgi (by two methods), the Sachs-Witebsky (by four methods), the Kahn (by three methods) the Meinicke (by twelve methods) and the Muller (by five methods). Twenty-seven techniques have been tried, and in over 200 sera and 100 fluids nineteen of these methods were applied simultaneously. The total number of tests performed upon blood and spinal fluid during the course of this investigation was 15,590.

The detailed comparison of these various methods has proved of considerable interest and value, but space here does not allow minute discussion of them. We would, however, quote with emphasis the results obtained when the ten principal and more valuable tests were applied simultaneously and without exception to a series of 300 sera and 200 fluids; for, as the cases were the same for all ten tests, it follows that the results are suitable for accurate and mathematical treatment. The absolute and relative degrees of sensitivity (in 160 syphilitic sera) and of relative specificity (in 140 negative controls) were as follows:—

	Absolute Sensitivity.	Relative Sensitivity.	Relative Specificity.
	per cent.	per cent.	per cent.
Macro-M.K.R. II	87.5	96.9	92.9
Indirect micro-M.K.R. II	93.8	97.5	95.0
Direct micro-M.K.R. II	95.0	98.7	94.6
Original M.K.R.Z.	90.0	93.7	96.4
M.B.R. II	86.3	95.0	96.4
M.B.R.Z.	88.8	96.3	96.4
Rountine Kahn	85.0	91.9	100
Modified Sachs-Georgi	80.6	87.5	97.9
Standard Sachs-Witebsky	61.9	75.0	100
Wassermann (Modified Wyler No. 1)	70.0	76.9	98.6

In 80 syphilitic fluids and 120 negative controls, the results were :—

	Absolute Sensitivity.	Relative Sensitivity.	Relative Specificity.
	per cent.	per cent.	per cent.
Macro-M.K.R. II	68.8	75.0	99.2
Indirect micro-M.K.R. II	63.8	75.0	95.0
Direct micro-M.K.R. II	67.6	78.8	89.2
Modified M.K.R.Z.	62.5	75.0	98.3
M.B.R. II	76.3	82.5	100
M.B.R.Z.	83.8	88.8	100
Routine Kahn	93.8	93.8	100
Modified Sachs-Georgi	51.3	67.5	99.2
Standard Sachs-Witebsky	52.5	62.5	97.5
Wassermann (Modified Wyler No. 1)	82.5	85.0	100

It is evident, that, then for blood the micro- M.K.R. II test is second to none in sensitivity and is therefore most suitable as an exclusion test, the Kahn is specially reliable for strictly diagnostic purposes owing to its complete specificity, while as a third test the M.B.K. II (or M.B.R.Z.) maintains a nice average between the extreme sensitivity of the Meinicke and the specificity of the Kahn. The Sachs-Georgi is of much less value, while the Sachs-Witebsky and the Wassermann are even more unsatisfactory.

For spinal fluids, the Wassermann gave very fair results, proving as good as (though no better than) the Muller, but it was still very much inferior to the Kahn. The Sachs-Georgi and Sachs-Witebsky were poor, and the Meinicke reactions were extremely uncertain.

E.—Publications.

1. "The Sero-Diagnosis of Syphilis in Mental Hospital Practice."—By Dr. J. ERNEST NICOLE and Dr. E. J. FITZGERALD, *Journal of Mental Science*, January, 1932.

The earlier results of this investigation are given and the general situation is discussed. Six tests are described and their relative values assessed.

2. "Statistical Expression of Results in Medical Research."—By Dr. J. ERNEST NICOLE, *Lancet*, January, 1932.

Two common pitfalls of medical statistics are pointed out and discussed, especially in relation to the laboratory investigation of diagnostic tests.

3. "The Age Incidence of Sero-positive Syphilis in Females."—By Dr. J. ERNEST NICOLE, *British Medical Journal*, April, 1932.

The incidence of sero-positive syphilis in 989 males and 640 females is expressed in each age-group of ten years. A maximum incidence is noted in males between 45 and 50 years of age, followed by a marked drop with a secondary rise after 65. In the females no peak occurs before 50 and the maximum incidence occurs after 60. The difference between the two sexes—a difference that is as marked after the general paralytics have been excluded from the series—is taken to afford support to the view that the chemical factors concerned in the serological reactions of female blood are so different from those of male blood during the period of life when menstruation occurs that many syphilitic females give negative reactions before the menopause, these cases giving positive results once the menopause is passed.

4. "Some Points in Connection with the Meinicke (M.K.R.) Test."—By Dr. J. ERNEST NICOLE, *British Journal of Dermatology and Syphilis*, June, 1932.

The results of applying the two M.K.R. tests (macro and micro) to blood and spinal fluids are discussed, the conclusion being reached that the micro-test is superior to the macro-reaction for blood; also that an incomplete clarification cannot always be taken as meaning a positive result, and that the macro-test should on no account be run as a one-tube method.

5. "Some Results with Muller's (M.B.R.) Tests."—By Dr. J. ERNEST NICOLE, *Urologic and Cutaneous Review*, December, 1932.

The results are given of the first 200 sera and 100 fluids tested by the three principal M.B.R. methods. The M.B.R.Z. is found to be more sensitive than the M.B.R. II (especially in fluids), and still more so than the M.B.R. Slow. This last was (unlike the other two) completely specific in sera. In fluids, the M.B.R. Slow and the M.B.R. II were both absolutely specific, and the M.B.R.Z. was relatively specific. Further conclusions are drawn in respect of certain problems of technique and interpretation.

6. "The Sero-Diagnosis of Syphilis (Second Report)."—By Dr. J. ERNEST NICOLE and Dr. E. J. FITZGERALD, in the press for *Journal of Mental Science*, January, 1933.

The techniques of 26 tests are described and discussed in detail. These tests were applied several at a time to 440 sera and 330 fluids, and the various disagreements obtained are quoted in full. The general results are expressed graphically, and are compared with those of certain other investigators.

7. "A Comparison of Some Tests for Syphilis."—By Dr. J. ERNEST NICOLE and Dr. E. J. FITZGERALD, in the press for *Urologic and Cutaneous Review*, March, 1933.

The results are given of testing by numerous reactions 500 sera and 374 fluids, special discussion being afforded to a series of 300 sera and 200 fluids on which the 10 principal tests had been applied simultaneously and without exception (see results quoted earlier). Special attention was paid to the question of "Significant differences" between the percentages recorded.

8. "A Comparison of the Various M.K.R. Techniques."—By Dr. J. ERNEST NICOLE, in the press for *British Journal of Dermatology and Syphilis*, 1933.

The results obtained with twelve M.K.R. and M.K.R. II methods are discussed. Some of these tests are further contrasted in pairs, according to the results obtained on only those cases that had both members of a pair performed simultaneously. The micro methods are found best for sera, and the macro-reactions for fluid. For fluids, a modification of the centrifuge method was found to be more satisfactory than the original technique. In the newer M.K.R. II test an incomplete clarification is less likely to occur in a negative case than with the old M.K.R. test.

As an *exclusion test* on *unselected* cases, the micro-test would appear to give an absolute sensitivity ranging about 90–94 per cent. and a relative specificity of about 98–99 per cent.

9. "Some Sources of Misunderstanding in Psychopathology."—By Dr. J. ERNEST NICOLE, abstract in the *Proceedings of the Royal Society of Medicine*, June, 1932.

The present position is reviewed in respect of introspection psychology, the existential school, behaviourism and anthroponomy, formalism and "gestalt," hormic psychology, etc. The difficulties associated with

"instinct" and "purpose" are mentioned, and certain possible links between apparently widely divergent schools are suggested. Finally reference is made to the confusion consequent upon the lax use of such terms as intuition, suggestion, complex, ego, self, introvert and others, and the conclusion is expressed that, if it is found unavoidable to change the original use and meaning of a term, its application should rather be restricted than enlarged, and that it is insufficient attention to these different meanings and to the delineation of the "schools" with which they originate that is responsible for so much confusion having been created in the minds of students of psychology and psychopathology.

IX—FROM THE LONDON COUNTY MENTAL HOSPITAL, BANSTEAD.

General Report.—By Dr. A. A. W. PETRIE, F.R.C.S., D.P.M., Medical Superintendent.

No special investigations have been conducted at Banstead in the year under review, although facilities have been granted to workers from the Central Laboratory to take samples of blood, etc., from epileptics and others. Facilities through the Board of Control have also been offered to the Ministry of Health to investigate by means of the McKendrick skin reaction carriers and potential typhoid carriers. No such work has, however, been commenced.

The *Routine Work of the Laboratory* is summed up as follows :—

Urine tests, 4,417; faecal plating for typhoid or dysentery, 470; sputum, etc. for tubercle bacilli, 193; Widal agglutination blood tests for enteric, etc., 712; blood cultures, 16; blood counts, 36; other tests, throat swabs, etc., 14; "malaria" blood slides examined, 74; faeces tests occult blood, 24; blood Wassermans (Maudsley Hospital), 505; c.s.f. tests (Maudsley Hospital), 123.

In all cases of cerebro-spinal fluid the Wassermann, protein, cells and Lange was done, and at times, one of the modifications of the Meincke tests was done in the blood serum, principally for recurrent cases where it tends to persist after the Wassermann has cleared up after treatment with malaria and tryparsamide. 30 out of the 41 cases of cerebro-spinal fluid taken after treatment with malaria and tryparsamide show improvement, and 18 of these 30 have become practically negative to all tests. Before treatment all 41 cases were definitely positive, and 38 were completely and characteristically positive.

Histological reports (Maudsley Hospital), 57; post-mortems, 126 (79 per cent. of the deaths).

X.—FROM THE LONDON COUNTY MENTAL HOSPITAL, BEXLEY.

General Report.—By Dr. G. CLARKE, Medical Superintendent.

A.—*Laboratory Work.*

The following is a general summary of laboratory work carried out during 1932 :—

Urines: general examinations, 209; microscopic, 119; acetone tests, 5; albumen estimations, 4; sugar, 4.

(These are in addition to the usual "Routine Examinations" made in the various wards.)

Blood: malarial, 55; differential counts, 11; cell counts, 15; estimation of sugar, 4; Widal, 1; faeces: for occult blood, 105; for bacterial examination, 41; cultures made, 89; bacteriological examinations: sputa, 62; swabs, 49; pathological fluids, 24; vomit, 4; microscopic sections of pathological tissues, 108. Post-mortem examinations, 128 (69 per cent. of deaths).

B.—*Publications.*

1. "A case of Naevoid Amentia. By Dr. CLIFFORD ALLEN. Photographs by Dr. F. O. WALKER.

A case was admitted on April 11th, 1932 (L.G., female) which displayed amentia with monoplegia of the left arm and some cranial nerve signs. As she had a history of fits and a naevus on her forehead a naevoid condition of her meninges was suspected. This was confirmed by X-ray. (*Lancet*, February 18th, 1933.)

2. "Some Experiments with Reinforced Analysis in cases of Psychosis." By Dr. CLIFFORD ALLEN.

Four cases of psychosis were analysed and the causative factors discovered. (130 dreams were collected from one case alone). Some improvement was noticed. An attempt was made to reinforce the analysis with auto-suggestion in a hypnoid state (i.e. whilst going to sleep). It was possible to exacerbate at will the psychosis in one case (S.C. male, admitted on September 29th, 1931) which was dependent on repressed homosexuality. The suggestions which were made were that the patient wished to be masculine. This was done on two occasions with this patient. Suggestions that this patient wished to be feminine reduced the hallucinations considerably.

Similar experiments were conducted on three other patients (C.S.J.M., male, admitted March 20th, 1931; V.P., male, admitted August 19th, 1932, and W.C., male, admitted March 18th, 1932). Owing to the danger no attempt was made to exacerbate their psychoses but to reduce them. Results: One case apparently cured, two cases improved, one unimproved.

As far as is known reinforcing analysis with auto-suggestion has never been previously recorded. It is hoped to publish these cases in full at a later date. (Submitted to the *British Journal of Medical Psychology*.)

XI.—FROM THE LONDON COUNTY MENTAL HOSPITAL, CANE HILL.

Report on Laboratory Work.—Communicated by the Medical Superintendent.

A summary of Routine Laboratory Work carried out during the year 1932 is given hereunder:—

Urine examinations: general, 1,364; special, 192; stools examinations for typhoid and dysentery, 62; blood: malarial films, 100; sugar estimations, 4; Widal's T.A.B., 10; Van den Berghs, 6; counts, 6; sputum for T.B., 50; throat swabs: cultures and examinations, 10; pleural effusions, 2; post-mortem examinations, 102 (68 per cent. of deaths).

XII.—FROM THE LONDON COUNTY MENTAL HOSPITAL, CLAYBURY.

General Report.—By Dr. G. F. BARHAM, Medical Superintendent.

A.—*Summary of Routine Laboratory Work.*

Urines: routine, 4,538; urea concentration test, 56; faeces: bacteriological, 3,266; special reactions, occult blood, 6; blood: total counts, 436; differential, 70; malarial films, 609; sugar estimations, 6; sugar tolerance curves, 237; urea estimations, 46; Widal reaction, 132; bacteriological swabs and cultures: blood cultured, 14; pus, 300; throat swabs, 53; sputum examinations, 124; post-mortem examinations, 157 (88 per cent. of deaths); museum specimens, 13; histological specimens, sent to Maudsley Laboratory, 40; miscellaneous: test meals investigated, 40; vomits, 7.

A new typhoid carrier was detected in 1932, in connection with an outbreak of enteric fever. There are now nine such carriers known in this hospital, living as far as possible under isolated conditions and subject to a monthly bacteriological examination of faeces. In the great majority of these the result is negative.

B.—*Research Work in Progress.* By Dr. SYDNEY WALPOLE HARDWICK, M.R.C.P., D.P.M.

(i) The bi-coloured Guaiac reaction (Thurzo). Investigations are being carried out on a large number of cerebro-spinal fluids, obtained from the Central Laboratory at the Maudsley Hospital. The procedure advocated by Greenfield and Stern is adopted. Special reference is being made to the reaction in cases of general paralysis, before and after treatment.

(ii) It has been claimed that feeding brain to certain psycho-pathological types produces a response in some cases. Experiments to test this are being conducted on stuporose schizophrenic patients.

(iii) In conjunction with Dr. Golla and other workers, acetyl-cholin preparations are being administered to certain cases showing the sympatheticotonic syndrome. The intention is to ascertain if any change occurs in the mental symptoms, with the diminution of the sympatheticotonic signs.

The investigation of blood sugar curves, previously reported, in its relation to the progress and prognosis of mental disorders continues.

Observations on the haemoclastic crisis, especially in reference to the prognosis, are also being regularly made.

XIII.—FROM THE LONDON COUNTY MENTAL HOSPITAL, COLNEY HATCH.

General Report.—By Dr. JOHN BRANDER, D.P.M., Medical Superintendent.

A.—*Investigations on Epilepsy.*

Investigations have been conducted by Dr. F. L. McLaughlin on certain aspects of Epilepsy. The investigations fall under two headings :

Acid-Base Balance.—The acid-base equilibrium of the blood in epilepsy has been studied, measurements being made of alkali-reserve, pH, serum electrolytes, and lactic acid. Previous investigators have directed attention to the acid-base equilibrium of the blood in epilepsy, but much confusion exists as to what takes place at the time of the convulsion. An attempt to elucidate this problem has been made by performing successive venepunctures on individual cases immediately before, during and after the epileptic crises. Biochemical measurements of these samples were compared with those taken during the inter-paroxysmal period. Concomitant observations were made on : (a) psychical manifestations (behaviour, aura, etc.); (b) physical phenomena (respiratory disturbances, muscular activity) occurring at the time of the convulsive period.

The results of this research are being prepared for publication.

The Rôle of Vascular Spasms.—The hypothesis that a causal relationship exists between the epileptic crisis and contraction of the cerebral vessels has resulted in various surgical attempts to prevent cerebro-vascular spasm by operations on the sympathetic system. Except for the recent operation by Lauwers—extirpation of the carotid body—these results have not been encouraging. Little has been done, however, by medical treatment, to prevent cerebro-vascular spasm. The therapeutic effect of acetylcholine and other arterial anti-spasmodic substances in epilepsy is at present being investigated.

B.—*Spinal Fluid Tests.* By Dr. F. L. McLAUGHLIN.

In association with the Central Pathological Laboratory of the London County Council Mental Hospitals, a number, 1,178, of comparative observations were made during the year on certain precipitation tests of the cerebro-spinal fluid. At this hospital the Citochol (423) and Kiss (255) reactions were investigated on specimens previously tested at the Central laboratory for the M.Br. II Reaction. It has been demonstrated

(unpublished) that these tests with unknown antigens do not compare favourably with the Wassermann reaction as performed at a reliable laboratory, using the technique elaborated by Mann and Partner and now accepted by the Royal Medico-Psychological Association as the standard method for use in mental hospital practice.

C.—*The Respiratory Rhythm in various Psychoses.* By Dr. ALEXANDER CANNON, D.P.M., and Dr. F. L. McLAUGHLIN.

Employing closed cabinet and kymograph, they have obtained records of the respiratory rhythm in various psychoses and have tested the influence of different types of thought upon the existing rhythm.

XIV.—FROM THE LONDON COUNTY MENTAL HOSPITAL, EWELL.

General Report.—By Dr. L. H. WOOTTON, M.C., D.P.M., Medical Superintendent.

The following investigations are being proceeded with at present :—

1. An investigation into the after-history of patients discharged from this hospital since its re-opening in 1927.
2. An analysis of the first 100 patients admitted to this hospital on a voluntary basis.
3. Studies on changes in the blood volume in schizophrenia.

Routine Laboratory Work.

The routine laboratory work for the year is as follows :—

Urine examinations : routine, 646 ; special, 682 ; faeces, 4 ; bloods : total counts, 1 ; sugar estimations, 3 ; urea estimations, 1 ; Widal reaction, 1 ; bacteriological swabs and cultures, 7 ; sputum examinations, 14 ; organs cut and stained, 12 ; post-mortem examinations, 14 (52 per cent. of deaths).

XV.—FROM THE LONDON COUNTY MENTAL HOSPITAL, HANWELL.

General Report.—By Dr. A. W. DANIEL, Medical Superintendent.

In addition to routine examination of urines both on admission and at time of annual physical examinations, the following work has been done in the laboratory during 1932. :—

Urine examinations (special bacteriological, microscopical, etc., 281 ; faeces for dysentery and typhoid organisms, 359 ; swab cultures, 9 ; blood films, 110 ; scrapings and smears, 85 ; sputum, microscopical examinations, 31 ; sections of pathological material, 10 ; museum specimens, 2 ; post-mortem examinations, 108 (52 per cent. of deaths).

In addition, Dr. Wallace has been investigating a particular aspect of auto-intoxication—Tyrosine metabolism in dementia praecox. This has not been completed yet.

Throughout the year, sporadic cases of dysentery have appeared among the male and female patients leading to a considerable amount of work in the laboratory ; the cases being grouped under Flexner W, X, Y.

XVI.—FROM THE LONDON COUNTY MENTAL HOSPITAL, HORTON.

General Report.—By Dr. W. D. NICOL, M.R.C.P., D.P.M., Medical Superintendent.

Pathological Department.

Analysis of Pathological investigations.—

Urine examinations : routine chemical, 4,292 ; bacteriological, 105 ; sugar estimations and examinations for acetone and diacetic acid, 374 ; urea concentration, 23 ; stools : complete examination for enterica organisms and B. dysenteriae, 309 ; number containing B. typhosus, nil ; B. paratyphosus A, nil ; B. paratyphosus B, nil ; B.

dysenteriae, 5 (isolated from specimens sent from neighbouring hospital); 102 examinations for *B. tuberculosis* (6 contained T.B.); 34 for occult blood, 10 for fat content; blood: 43 examinations for sugar content, 13 for urea content, 6 for culture, 6 for calcium content, 5 for Cholesterale; enumeration of cells and differential count, 78; for Van-den-Bergh reaction, 11; 13 agglutinations for enterica group; pus: 57 examinations for pathogenic organisms; throat swabs and culture for *B. diphtheriae* and other pathogenic organisms, 81; 124 sputum examinations for T.B. and other pathogenic organisms (12 specimens found to contain T.B.); gastric contents, 16 complete analyses; tissues: 319 histological examinations (including brain and spinal cord); post-mortem examinations, 111.

X-Ray Department.

During the year the X-ray department has been modernized, a new plant having been installed, and a part-time Radiographer has been appointed.

The department continues to do radiography for the neighbouring L.C.C. mental hospitals.

The number of successful plates registered during the year was 436, and the total number of cases examined was 305; of these, 218 and 146 respectively related to Horton patients.

Histology of the Alimentary Tract in mental disorders.

Microscopic examinations of various regions of the alimentary tract are being conducted by Dr. F. G. L. Barnes, especially in relation to confirming work on *Dementia Praecox* by foreign workers.

General Paralysis, Malaria Therapy Department.

A report on a series of 200 cases of general paralysis treated since malaria therapy was commenced in April, 1925, was published during the year. The cases were all women drawn from the various L.C.C. mental hospitals. After stressing the importance of an accurate diagnosis of general paralysis, the clinical material was analysed and the relative percentage of clinical types was: grandiose, 27 per cent.; maniacal 13 per cent.; depressed, 15 per cent.; simple dementing, 45 per cent.

It was found that of the 200 cases, 35 per cent. had been discharged (half of these in a state of good remission), 40 per cent. remaining in hospital and 25 per cent. had died. The cases had been under observation for periods ranging from 7 years to within 9 months of treatment.

Among the possible factors influencing the result, the author laid most stress on the clinical type which the general paralytic assumed and on the duration of disease before commencement of treatment; the highest percentage of recoveries undoubtedly occurred in those cases where the disease was treated in the early stages, and in the clinical types the recovery rate was much higher in the grandiose, maniacal and depressed types than in the simple dementing form which comprised the largest group.

Apart from 24 cases out of the series of 200 malaria alone was employed. The striking feature with regard to the good remissions at Horton was the time which elapsed between the date of treatment by malaria and the discharge of the patient from hospital. It is almost a constant factor ranging between 7-9 months and from this point of view is of prognostic significance.

With regard to the patients remaining in hospital (i.e. those who were not well enough to be discharged) physical improvement was marked in a large number of cases and in those deteriorating cases the "classical" emaciated terminal stage was no longer seen. In most cases the clinical character of the disease changes, a simple dementing psychosis supervening on what was originally a grandiose, maniacal or depressed type. In a few cases schizoid reactions have been observed and only four cases out of 200 developed an acute hallucinatory psychosis which is described by some Continental workers as occurring in 10 per cent. of cases.

Four species of malaria have been employed at Horton: Benign Tertian, Quartan, Malignant and Ovale. In the majority of cases Benign Tertian was employed. The number of cases treated with other species was relatively small and it was difficult to assess the respective therapeutic values. Good remissions have been seen in cases treated with each different kind. In Quartan malaria however it was found suitable for an older and more debilitated type of patient and also useful for those cases who were immune to Benign Tertian.

After dealing with the mortality in association with malaria and the duration of fever and the relation of pyrexia to clinical results a table is set out giving numbers of cases which have had a second or even third course of malaria on account of lack of mental improvement. It was possible with different strains of malaria (there being no immunity between the different strains), to give a patient a second course of malaria which proved quite as severe as the primary attack. One was able to conclude quite definitely that the mental improvement which occurs in patients is not influenced in any way by subsequent courses of malaria. Sixty-one cases had been successfully re-infected with malaria, and with the exception of four cases who were re-infected within six months of the primary attack no mental improvement was observed.

Some 32 cerebro-spinal fluids of unimproved cases were examined at the Central Laboratory at the Maudsley Hospital. Fifty per cent. of these returned a negative Wassermann and in 10 it was markedly reduced. In all these cases the Wassermann reaction was strongly positive prior to treatment. It must be noted that they received malaria alone and not any supplementary anti-specific treatment. There does not appear to be any correlation between the serological reaction and the clinical result.

Reference was also made to the absence of spirochetes in the brains of those treated general paralytics, which were examined at the Maudsley Hospital.

("A review of seven years' malaria therapy." By W. D. NICOL. *Journal of Mental Science*, October 1932.)

Malarial research in co-operation with Colonel James at the Ministry of Health continues. A paper on malignant tertian malaria was read before the Tropical Section of the Royal Society of Medicine.

("A Study of induced malignant tertian malaria." By JAMES, NICOL and SHUTE. *Proceedings of the Royal Society of Medicine*. June, 1932. XXV.)

XVII.—FROM THE LONDON COUNTY MENTAL HOSPITAL, LONG GROVE.

General Report.—By Dr. D. OGILVY, Medical Superintendent.

A.—*Routine Laboratory Work.*

A summary of routine laboratory work carried out during the year is given hereunder:—

Blood: counts, 98; Dreyer's test, 36; blood sugar estimations, 22; glucose tolerance curves, 8; blood urea, estimations, 12; urea concentration tests, 4; faeces: bacteriological examinations, 151; for occult blood, 29; sputum examinations—bacteriological, 174; urine examinations: routine, 2,109; bacteriological, 36; sugar and acetone, 83; miscellaneous: bacteriological examination of pus, 320; throat swabs, 16; occult blood (in vomit), 10; bacteriological examination of urethral smears, 20; test meals, 20; pleural fluid, 10; post-mortem examinations, 104 sections cut for pathological diagnosis, 32.

B.—*Publication.*

“Serum Agglutinations to the Typhoid Group in cases of Pulmonary Tuberculosis.” By Dr. J. R. A. MADGWICK, D.P.M.

In this work the agglutination reactions to the typhoid group of a series of tuberculosis cases in the hospital using Dreyer's technique and the Oxford standard agglutinable cultures were made. Seventy-three cases with no history of T.A.B. inoculation or infection were examined and 100 control cases tested.

The results suggest that in a case showing persistent agglutination, reactions of average low titre and not showing the rise of titre associated with the progress of true typhoid infections, the possibility of tubercle should not be overlooked. (*Lancet*, May, 1932.)

XVIII.—FROM THE LONDON COUNTY MENTAL HOSPITAL, WEST PARK. *Report on Research Work.*—Communicated by Dr. N. ROBERTS, O.B.E., D.P.M., Medical Superintendent.

Treatment of Dementia Praecox with Sulfosin.—By Dr. W. McCARTAN, D.P.M.

A short paper on the above was published last year (*Lancet*, Feb. 13th, 1932). It is now felt that since the treatment is drastic, it should be reserved for selected cases in whom less severe methods have failed.

Trypan Blue intravenously in Post-Encephalitic Parkinsonism.—By Dr. W. McCARTAN, D.P.M.

This treatment is being given a trial at West Park because of the claims of Laignel-Lavastine and Jean Sterne (*Bulletins et Memoirs de la Societe Medicale des Hopitaux de Paris*, May 1932). The rationale of the treatment is difficult to understand: Trypan Blue has been shown to have germicidal value in trypanosomiasis and in 1916 was also used in tuberculosis. Any attempt to attack the infecting organism in the post-encephalitic state would appear to be rather belated. It seems possible that successive injections of Trypan Blue may simply amount to repeated bombardment of the reticulo-endothelium. Although none of the cases have yet shown any improvement it is too early to express an opinion on its practical value.

Treatment of Oculogyric Crises.—By Dr. H. ASTLEY COOPER, D.P.M.

Fourteen cases of Oculogyric Crises in Encephalitis reviewed, and the effects of treatment with Luminal and Bromide recorded. Improvement in 13 cases and complete control of the crises in most instances. (*Lancet*, Feb., 1932.)

Basal Metabolism in Schizophrenics.—By Dr. W. A. CALDWELL, D.P.M.

Experiments embraced ordinary basal metabolic experiments and alterations in metabolism following ingestion of 50 gms. glucose, measured quantities of iced water and injections of Ant. Pituitary. No definite findings can be given as yet since experimentation is continuing, but so far they show no marked deviation from findings in the normal subject.

At the same time blood sugar estimations and Van Hyke gas analysis are being taken in an endeavour to obtain some idea of nature of foodstuff being metabolised.

XIX.—FROM THE CENTRAL PATHOLOGICAL LABORATORY OF THE LONDON COUNTY MENTAL HOSPITALS.

Report on Research Work.—By Dr. F. L. GOLLA, O.B.E., F.R.C.P., Director.
Publications.

“Experimental Error in Enumeration of Leucocytes and its Application to the Haemoclastic Crisis.” By IRENE YATES, M.D., M.R.C.P., and JOHN C. BATT, M.B., Ch.B. *Journal of Mental Science.* January, 1932.

“Serum Agglutinations to the Typhoid Group in Cases of Pulmonary Tuberculosis.” By F. PARTNER, in conjunction with J. R. A. MADGWICK, M.B., D.P.M., of Long Grove Mental Hospital. *The Lancet.* 1932, I.

“pH of Blood of Psychotics measured by the Glass Electrode.” By RICHARD HENRY HURST, Ph.D., B.Sc., A.I.C. *The Biochemical Journal.* 1932, XXVI.

“Familial Bilateral Acoustic Tumours.” By L. MINSKI, M.D., M.R.C.P. of Maudsley Hospital, with histopathological examination by C. GEARY. *The Journal of Neurology and Psychopathology.* 1932, XII.

In Press.

“The Rate of Conduction and Refractory Period of the Human Sensory Neurone.” By F. GOLLA, F.R.C.P., and S. ANTONOVITCH, M.B., D.P.M.

“The Estimation of Calcium in Blood Serum and Cerebro-Spinal Fluid.” By A. H. TINGEY, M.A.

Work ready for Publication.

“A Method for the Investigation of the Impedance of the Human Body to an Alternating Current.” and “The Use of an Electrical Method as an aid to Diagnosis of Diseases of the Thyroid Gland.” By M. B. BRAZIER, Ph.D., B.Sc.

“The Correlation between certain Electrical Properties of the Body and the Basal Metabolic Rate in Thyroid Feeding and Thyroxine Injection.” By F. M. GRANT, M.D., M.R.C.P., D.P.M., and M. B. BRAZIER, Ph.D., B.Sc.

“Lactic Acid Metabolism in Mentally Abnormal States” and “Lactic Acid Metabolism in Physiological States.” By R. H. HURST, Ph.D., B.Sc., A.I.C., and L. C. COOK, M.R.C.S., D.P.M.

“The Acid-Base Equilibrium of the Blood in Epilepsy.” By R. H. HURST, Ph.D., B.Sc., A.I.C., and F. L. McLAUGHLIN, M.D., D.P.M.

Work in Progress.

“Investigation of serum electrolytes in Epilepsy” and “Investigation of manganese as a catalyst in the Human Brain.” By A. H. TINGEY, M.A.

Routine Laboratory Work.

Central Clinic for Discharged G.P.I. Patients.—Between April 1st and December 31st, 130 patients were examined, the total number of visits being 358.

Examinations.—Histological, 136; sera, 7,035; c.s.f., 1,544; all others 3,168.

XX.—FROM THE MAUDSLEY HOSPITAL.

Report on Research Work.—By Dr. EDWARD MAPOTHER, F.R.C.S., F.R.C.P., Medical Superintendent.

The following articles, written by members of the Maudsley Hospital Clinical Staff, which contain the results of investigations concluded during 1932 have been published.

"Familial Bilateral Acoustic Tumours." By LOUIS MINSKI, M.R.C.P. *Journal of Neurology and Psychopathology*. Feb., 1932.

"Acute Encephalitis and the Korsakow Symptom-Complex." By Dr. C. CLIFFORD DAVIS, M.R.C.P. *Lancet*. March, 1932.

"The Experience of Time in Mental Disorder." By Dr. AUBREY LEWIS. *Proceedings of Royal Society of Medicine*. March, 1932.

"The Use of Nembutal in Psychiatry." By Dr. DESMOND CURRAN, M.R.C.P., and Dr. LOUIS MINSKI, M.R.C.P. *Lancet*. July, 1932.

"A pedigree showing an Atypical form of hereditary optic atrophy exhibiting apparent Polymorphism." By Dr. W. H. DE B. HUBERT. *Journal of Neurology and Psychopathology*. August, 1932.

"A Case of Narcolepsy." By Dr. E. MILDRED CREAK, M.R.C.P., D.P.M. *Lancet*. Sept., 1932.

"A Case of Partial Deafness Simulating Congenital Auditory Imperception." By Dr. E. MILDRED CREAK, M.R.C.P., D.P.M. *Journal of Neurology and Psychopathology*. November, 1932.

Also a paper appeared in the *Lancet*, October 1st, 1932, by Dr. Desmond Curran, M.R.C.P., and Dr. Leslie Cook, D.P.M., in which a case of chronic tetany previously diagnosed incorrectly as a chronic psycho-neurotic condition was reported, and its relationship to the group of so-called idiopathic steatorrhoeas discussed.

In addition several other investigations have been made and are now awaiting publication. Among them are:—

"A clinical Study of Delirious States." By Dr. DESMOND CURRAN, M.R.C.P.

One hundred cases of delirium seen at the Maudsley Hospital or at the Phipps Psychiatric Clinic, Baltimore, have been subjected to a careful analysis. In the 100 cases there were represented roughly 20 aetiological factors; 30 per cent. of the cases were alcoholic. Independence of the clinical picture from the particular aetiological factor was found, and a clear relation demonstrated between, on the one hand, the intensity and duration of the functional disorder (as apart from symptomatology) and on the other, the personality of the individual as revealed in previous psychoses and otherwise, the important experiences of his life and the precipitating circumstances of the attack. In all delirious states patients were found to show a defect of differentiation and discrimination, and it was possible to draw an analogy between delirious activity and the phenomena of normal dreaming.

"A Study of the Sexual Life in Puerperal Psychoses." By Dr. E. W. ANDERSON, M.R.C.P., D.P.M. (To appear in *Journal of Mental Science*.)

The sexual life in 50 women suffering from puerperal psychoses was examined and compared with that of 50 cases of non-puerperal psychoses. The results may be given briefly as follows:

No material difference in the pre-psychotic sexual life in the two groups was demonstrable. No guide as to prognosis in puerperal conditions was obtainable from the study. Masturbation and other erotic phenomena during the psychosis were only slightly commoner in the puerperal group and could not be regarded as characteristic features. There was nothing to support the view that a "puerperal" psychosis is a product of a morbid sexual constitution, and the puerperium must be regarded as effective in the same way as any other precipitating factor.

"Prolonged Manic Excitement." By Dr. E. W. ANDERSON, M.R.C.P., D.P.M.

Four cases of excitement lasting over years were examined and the distinction drawn between chronic mania and prolonged acute mania. Precipitating factors were found to be less significant than the expansive manic disposition in such cases. The difficulty, in the present state of knowledge of arriving at a rational prognosis, was clear in this study.

"The Inheritance of Mental Disorder." By Dr. AUBREY LEWIS, M.R.C.P.

This is a contribution to the book on "Disease and Heredity," to be published by the Eugenics Society. The known facts and prevailing views on this subject are presented at length, together with observations made in the various studies of inheritance that have been conducted at the Maudsley Hospital during the past two years.

"Acromegaly in one of uniovular twins." By Dr. AUBREY LEWIS, M.R.C.P.

A report of a rare instance in connection with which the influence of heredity and of environment upon the occurrence of pituitary disorder is discussed, and the relevant literature collected.

"The Aetiology of Nocturnal Enuresis." By Dr. WILLIAM DE B HUBERT.

A series of 50 cases of enuresis in children have been examined particularly with reference to inherited factors. Hereditary influences were found to be significant when the data were compared with those found in control-groups. Other aetiological factors were also considered and conclusions drawn as to the mode and efficacy of therapeutic intervention. (To appear shortly in the *Lancet*.)

"The Effect of Caffeine upon Depressed Patients." By Dr. E. W. ANDERSON, M.R.C.P., D.P.M., and Dr. DESMOND CURRAN, M.R.C.P.

Large doses of Caffeine were administered to a group of depressed patients and the effects upon total behaviour observed. It was found that the effects were essentially the same as those obtained in normal persons. No therapeutic value could be regarded as attaching to such administration.

"Methods and Results of Out-patient Psychotherapy." By Dr. D. C. CARROLL.

It was found as a result of investigation of a large number of patients treated in the out-patient department at the hospital that for efficient treatment beds must be available to which patients may be admitted when necessary, and sessions must be held in the evening. All methods of psychotherapy were found to be appropriate so long as the patients were grouped. It was found that with neurasthenic patients persuasion was the most valuable method, with obsessionals a modified analytical technique, in the case of patients with conversion hysteria suggestive methods were most applicable, and for anxiety states simple analytical methods. Personal contact was found to be more important than the particular method employed. It was found that a single psychotherapist could satisfactorily treat about 45 patients over an average period of 4½ months with good results, but careful preliminary selection was found to be essential and it became evident that for many patients a brief interview at weekly intervals was as efficacious as any more extended or complicated psychotherapeutic method.

"Historical data regarding Melancholia." By Dr. AUBREY LEWIS, M.R.C.P. A review of the variations in the general conception of melancholia and its treatment. Paper read before The Royal Society of Medicine. (Section History of Medicine.) Nov, 1932.

XXI.—FROM THE CHESHIRE COUNTY MENTAL HOSPITAL, CHESTER.

Report of Laboratory Work.—Communicated by the Medical Superintendent.

The following is a summary of the routine laboratory work carried out during the year :—

Urine examinations, 1,419; blood examinations for malarial parasites, 415; Wassermann tests, 214; sputum examinations, 25; Widal tests, 3; examinations of faeces, 121; blood counts, 68; examinations of swabs, 204; blood sugar estimations, 45 samples of milk analyzed, 65; miscellaneous (blood urca, pus, etc.), 28.

In twelve of these cases autogenous vaccines were prepared.

XXII.—FROM THE CHESHIRE COUNTY MENTAL HOSPITAL,
MACCLESFIELD.*Report of Clinical and Pathological Investigations.*—Communicated by
DR. H. DOVE CORMAC, D.P.M., Medical Superintendent.A.—*Laboratory Investigations.*—By Dr. H. STAFFORD, D.P.M.

The total number of investigations carried out in the Pathological Laboratory during the year 1932 was 2,743, as follows :—

Routine urine examinations, 1,204; bacteriological examinations of urine, 20; of faeces, 303; of sputum, 35; of pus, exudates, etc., 63; preparation of autogenous vaccines, 7; full blood counts, 4; examinations of c.s.f., 13; of blood films, 9; chemical examinations of blood, 7; tissue sections for microscopical examination, 273; agglutination reactions of blood serum, 624; Wassermann reactions of blood and c.s.f., 181.

Dysentery.—During the year, two cases of dysentery occurred in February; these were female patients in a ward where old cases of dysentery are housed, and one of these patients had herself suffered from a previous attack of the disease. Since that date no case has occurred, and there have been no illnesses resembling dysentery in their clinical manifestations. The search for dysentery carriers which was commenced at the end of the preceding year has been carried on in the male wards which suffered during the epidemic of 1931. Results have been extremely meagre. The sera of all cases in the wards concerned have been examined for agglutination of the five strains of Flexner's bacillus, and this has been followed by repeated examination of the faeces. The serum reactions have been found to provide very little information of any value. It was rare to obtain agglutination of any strain at a dilution of 1 in 80 or over after 6 hours at 55° C. except by sera from patients who were known to have suffered from dysentery in the past; only 4 patients who had no history of previous attacks gave such serological results. Four cases who had dysentery during the preceding twelve months, and from whose stools Flexner's bacillus had been isolated during the attack, gave complete agglutination of one or more of the strains of that organism at dilutions of 1 in 20 only. On the other hand, some cases whose last attack of dysentery occurred from 2 to 17 years ago gave agglutination in dilution up to 1 in 320.

B. dysenteriac Flexner was isolated from the faeces of only three cases, all of whom were known to have suffered from dysentery in the past, and were therefore already looked upon and treated as potential carriers. The serological results from these three cases were as follows: Type Y partially agglutinated at a dilution of 1 in 40; Types V and Y partially agglutinated at 1 in 20; Type Y agglutinated at 1 in 80. It will thus be seen that examination of sera for agglutinins to Flexner's organisms is not likely to prove of much assistance in any search for dysentery carriers.

Diarrhoea.—Cases of diarrhoea have again been fairly frequent, but mild in character, almost always apyrexial, and the stools have not exhibited gross evidence of blood or mucus content. Apart from an increased streptococcal flora the following organisms have been isolated from the excreta of these cases on various occasions: *B. alkalescens* (frequently), *B. alkaligenes*, *Proteus vulgaris*, *Ps. pyocyanea*, and *B. coli mutabile* (in one case only). In the examination of faeces for dysentery bacilli various unclassified non-lactose-fermenting bacilli, and coliforms which only fermented lactose after times varying from 4 to 12 days, have been isolated fairly frequently.

Typhoid.—One female patient developed typhoid fever (*B. Typhosus*) during February. Three female members of the staff suffered from *B. paratyphosus B.* infection in February, July and August respectively; there was a mild epidemic of this infection in Macclesfield during this period. The case which occurred first continues to excrete the bacillus from the intestine up to the present time. One nurse suffered a mild attack of diphtheria in March.

Tuberculosis.—Four fresh cases of infection by the tubercle bacillus occurred during the year; one case was admitted with pulmonary tuberculosis, an imbecile long resident in the hospital was found to have infected sputum, and the other two, both dying from general paralysis of the insane, were only diagnosed at post-mortem.

Acute urinary infections have been very rare; positive cultures were only obtained in two cases, *Staph. aureus* in one and *B. coli commune* in the other.

During the year the sera of 68 new admissions were examined for agglutination of *B. typhosus*, *B. paratyphosus B.* and *B. dysenteriac Flexner Y.* The dysentery bacillus was agglutinated in dilutions of 1 in 80 or over in 6 hours at 55° C. by 26·47 per cent. *B. typhosus* and *B. paratyphosus B.* were *both* agglutinated in dilutions of 1 in 40 or over in 2 hours at 55° C. by 7·35 per cent. (this probably indicates previous anti-enteric inoculation); *B. typhosus only* by 8·82 per cent.; and no case gave agglutination of the paratyphoid organism *only* of the enteric group.

Of the new admissions during the year, 16 male and 6 female patients gave a positive Wassermann reaction of the blood serum—19·28 per cent. of the total male and 5·88 per cent. of the total female admissions; the corresponding percentages for 1931 were 13·43 and 3·29 respectively.

In addition to the above investigations, the laboratory furnished reports on 132 specimens submitted from various sources outside the Hospital.

B.—**An Investigation into the Physical Characteristics of the Skin in some Types of Psychosis.*—By Dr. L. C. F. CHEVENS, D.P.M.

The investigation here summarized was undertaken as there is considerable divergence of opinion regarding the more obvious variations in the physical characteristics of the skin in the mentally deranged.

The skins of 325 persons of both sexes (170 females and 155 males) were examined with regard to the features recorded in Tables I and II. This total included 50 normal males and 60 normal females as controls.

* Summary of a paper by P. B. Mumford and L.C.F. Chevens. Published in the *Journal of Mental Science*, April, 1932.

The actual numbers of cases and their distribution were as follows :

	Females.	Males.	Average Ages.
			Years.
Normal	60	50	—
Imbecile	25	55	35
Dementia Praecox	30	30	29
Manic-depressive	20		37
	(Examined in the manic phase).		
Melancholic	35	20	48

The findings were somewhat inconclusive and occasionally contradictory, but they appeared to be consistent enough to warrant some correlation with the mental state. They are expressed in the following tables :

TABLE I.—FEMALES.

All data are expressed in percentages of the total number examined.

	Normal.	Imbecile.	Primary dementia.	Melan- cholic.	Manic depressive.
Texture :					
Tough	18	4	10	32	5
Average	32	52	40	51	30
Juvenile	50	44	50	17	65
Grease content :					
Increased	50	24	67	38	15
Average	39	60	33	38	60
Decreased	11	16	—	24	25
Peripheral temperature :					
Increased	—	4	3	—	35
Average	53	64	20	68	50
Decreased	47	32	77	32	15
Health :					
Average	70	84	63	71	85
Reduced	30	16	37	29	15
General moisture :					
Increased	8	12	20	6	40
Average	67	68	63	72	50
Reduced	25	30	17	32	10
Peripheral moisture :					
Increased	25	12	7	24	60
Average	65	76	60	54	35
Reduced	10	12	33	20	5
Ichthyosis :					
Present	33	28	43	28	30
Absent	66	72	57	72	70
Cyanosis :					
Present	23	12	60	6	—
Absent	76	88	40	94	100
Pigment :					
Present	35	8	17	38	10
Absent	65	92	83	62	90
Subcutaneous fat :					
Increased	17	12	3	6	15
Average	78	78	87	46	70
Reduced	5	20	10	48	15
Hair (Face and Areolar Areas) :					
Increased	23	20	37	28	20
Average	77	80	63	72	80

TABLE II.—MALES.

All data are expressed in percentages of the total number examined.

	Normal.	Imbecile.	Primary dementia.	Melan-cholic.
Texture :				
Tough	6	—	3	10
Average	58	54	33	70
Juvenile	36	46	64	20
Grease content				
Increased	16	22	16	65
Average	84	52	51	20
Reduced	—	26	33	15
Peripheral temperature :				
Increased	20	2	—	—
Average	70	52	23	55
Reduced	10	46	67	45
Health :				
Average	86	82	67	60
Reduced	14	18	33	40
General moisture :				
Increased	16	4	10	5
Average	62	78	51	60
Reduced	12	18	39	35
Peripheral moisture :				
Increased	16	6	16	15
Average	76	88	40	80
Reduced	8	6	44	5
Ichthyosis :				
Present	16	26	33	15
Absent	84	74	67	85
Cyanosis :				
Present	2	19	70	5
Absent	98	71	30	95
Pigment :				
Increased	24	15	15	20
Average	76	85	85	80
Subcutaneous fat :				
Increased	20	6	8	5
Average	74	68	59	80
Reduced	6	26	33	15
Hair (Limbs and body) :				
Increased	16	6	8	15
Average	84	70	46	65
Reduced	—	24	46	10

The correlation was made along the lines of Kretschmer's work relating psychic disposition to body-type. The skin was regarded as one indication of the type of physical constitution.

A biological affinity has been found to exist between the asthenic, astheno-athletic and dysplastic types of physique and the psychic disposition of schizophrenics. This is especially true of the asthenic and dysplastic types. The asthenic skin has a poor capillary circulation, a diminished secretion of sweat and sebum, a sparse beard and little hair on the trunk and limbs in males and scanty pubic and axillary hair in both sexes. The hair on the scalp, however, is thick and grows low over the forehead. Subcutaneous fat is diminished. The skin is often unhealthy.

The dysplastic types are derived from the asthenic and are associated with various hypoplasias and fat abnormalities. Women often show male characteristics and hypertrichosis.

It can be seen from the tables that the present group of cases of Dementia Praecox shows quite definitely the skin characteristics of the asthenic and astheno-dysplastic physique.

Manic-depressive insanity occurs predominantly in patients of a pyknic type. The pyknic skin is healthy and moist. The beard is strong in males and there is a vigorous growth of hair on the limbs and trunk in contrast with a thin growth on the scalp. In both sexes axillary and pubic hair is abundant. There is a marked deposition of subcutaneous fat and the trunk, face and limbs thus have rounded contours.

Only females were examined in this group, but it can be seen from the tables that the skin conforms to the cutaneous type of the pyknic in such characteristics as increased moisture, good general health, absence of cyanosis, increase in subcutaneous fat and the small increase of facial and areolar hair.

The melancholics were mostly of the involucional and some of the pre-senile type and the skin characteristics tend to be somewhat blurred by impending senescence. The description of the melancholic patient's skin is usually that of one showing early senile changes such as diminished grease content, increased cyanosis and general slight atrophic changes. The present group does not conform to this description, and it may be that the average age was not advanced enough for this so that in many subjects characteristics of the pyknic skin were still retained unimpaired.

The skins of the imbeciles showed the following points: juvenile texture, good general health, little cyanosis, diminished pigmentation and hair growth on the body and little subcutaneous fat—in other words, a skin of a juvenile type. The average age of the group does not seem low enough to account for this. Rather it may be due, as Stoddart suggests, to an association between the cutaneous and nervous systems owing to a common origin from the epiblastic layer, both systems showing, in this case, a concurrent failure of development to the adult stage.

C.—*The Mental Heredity of Cases admitted during the Year 1932.*—By Dr. P. M. CROWE.

During the year 1932 the social worker has visited the relatives of 79 newly admitted patients. In each case she has obtained a full individual, family and environmental history, with a résumé of the patient's prospects if discharged, i.e., prospects of employment, supervision, etc.

The results of an analysis of these histories from certain aspects of mental heredity are tabulated below:—

Twenty per cent. of the patients came from families where some other member had been certified insane. Details as follows:—

Cases showing insanity in other members of family.

	Previous generation.		Same generation.		Total.
	Mother's side.	Father's side.	Brothers.	Sisters.	
Males	2	3	1	3	9
Females	4	2	1	—	7
TOTAL	6	5	2	3	16

30.3 per cent. of the patients came from families showing a history of mental instability in the previous generation. Details as follows :—

Cases showing neurotic heredity.

	Mother's side.	Father's side.	Both sides.	Total
Males	6	2	2	10
Females	6	6	2	14
TOTAL	12	8	4	24

12.6 per cent. of the patients came from families showing no history of any mental instability, the cause of the insanity being obviously toxic in nature. Details as follows :—

Toxic cases.	Male.	Female.	Total.
Syphilis	5	—	5
Encephalitis Lethargica	1	2	3
Puerperal	—	1	1
TOTAL	6	3	9

Of the remaining 30 patients, 5 were epileptics. Two were females, in each case the epilepsy following a confinement. Three were males, in 1 case the epilepsy following a severe head injury. In no case was there any history of epilepsy in other members of the family.

In 7 cases it was not possible to obtain sufficient history.

The remaining 18 cases showed no hereditary history of note.

Remarks.

1. *Inheritance of Neuropathic Tendency.*—It is noticeable that in 50.6 per cent. of the cases there is a history of some form of mental instability from a hereditary point of view.

2. *Discharge of Patients.*—Twenty-three of the patients have been discharged as follows :—Recovered, 15 ; relieved, 7 ; not improved, 1. Of these 11 were married, 6 having children. In 1 case there were 5 miscarriages. In a second case there are 5 children, out of which 1 is an epileptic, and another is mentally deficient. The 12 single patients are all young and capable of producing families.

3. *Anticipation.*—In all but one of the cases where insanity occurred in two generations, that in the second generation appeared at an earlier age.

4. *Suicide.*—Twelve patients were definitely suicidal, and 9 threatened suicide. In only 3 cases were histories of suicide in other relatives found, and these were all definitely suicidal cases. Thirteen of these cases had a definitely unstable mental heredity.

5. *Environment.*—It was noticeable, that wherever there was a large family, the parents were socially sub-normal, and incapable of staying in any form of employment.

On the other hand where the environment was of better class socially, and financially, there was repeatedly a neurotic history with family discord.

6. During the year 1932, the "Total New Admissions" was 187.

The relatives of 108 patients who were not visited by our social worker received the usual history forms to fill in.

Below a comparison is made between the figures obtained by the two different methods:—

	Histories obtained by social worker, in 79 cases.	Histories from questionnaire sent to relatives in 108 cases.
Neuropathic Heredity	per cent. 50·6	per cent. 35
Toxic cases	12·6	9
Epileptics	6·3	2·7
Insufficient History	8·8	16·6
Suicidal	26	14·8

These figures show two marked discrepancies:—

(a) An increase of 15·6 per cent. in the cases having a neuropathic heredity as ascertained by our social worker. This suggests a reticence on the part of relatives in filling up a questionnaire sent through the post.

(b) An increase of 7·8 per cent. histories which were insufficient for forming a conclusive opinion in those supplied by the relative.

It should be added that in many cases the forms as filled in by the relative were so brief, illiterate, and difficult to read, that their verity could only be doubtful.

XXIII.—FROM THE CORNWALL COUNTY MENTAL HOSPITAL, BODMIN.

Report on Laboratory Work.—Communicated by the Medical Superintendent.

The following is a summary of the examinations made in the laboratory during the year:—

Urine: Routine, 734; special including bacteriological, 141; faeces: bacteriological, 331; blood: total counts, 6; differential, 6; sugar estimations, 7; urea estimation, 1; Van den Bergh reaction, 1; Widal reaction, 149; cultures, 2; Wassermann test, 193; c.s.f. complete examination (i.e. cell count, protein content, colloidal gold curve, Wassermann test), 17; bacteriological swabs and cultures, 15; sputum examinations, 19; vaccines prepared, 2.

XXIV.—FROM THE DORSET COUNTY MENTAL HOSPITAL.

Laboratory Report.—By Dr. P. W. BEDFORD, D.P.M., Medical Superintendent.

Analysis of Pathological Investigations.—During the year, 3,524 investigations were carried out in the laboratory, this being an increase of 1,495 on the previous year. Subjoined is a summary:—

Urine: Chemical, deposit, etc., 1,349; sugar estimations, 136; albumen estimations, 21; urea estimations, 16; bacteriological examinations, 19; spectroscopic, 47; blood: Widal's reaction, 338; Meinicke's reaction, 284; polynuclear count, 38; Schilling index, 15; red and white cell count, 46; Wassermann, 13; sugar estimations, 38; urea estimations, 13; Van den Bergh reaction, 5; icterus index, 2; reticulocyte count, 5; bacteriological, 7; bacteriological examinations: faeces, 748; water, 40; sputum, 25; throat swabs, 15; pus, 22; gall bladder, 15; vaccines prepared, 5; gastric juice: chemical examinations, 18; absorption tests, 48; c.s.f. chemical examination, 42; Takata-Ara, 2; gum mastic, 42; colloidal gold, 23; Meinicke, 42; Wassermann, 32; pathological sections, 10.

Typhoid and Dysentery.

These diseases continue to show a sporadic incidence throughout the hospital, despite an intensive laboratory investigation.

(a) *Typhoid*.—Two fresh cases occurred during the year.

Case No. 1. Nurse, Herrison House. *B. typhosus* was isolated from both blood and faeces. Since recovery repeated examinations of faeces have been negative. Routine examination of all patients and staff failed to reveal the presence of a carrier.

Case No. 2. Female patient, Main Building. *B. typhosus* was isolated from the faeces. This patient was in the same ward as known carriers, and has since died.

Carriers.—No new carriers were found. The only known carrier on the male side underwent cholecystectomy. *B. typhosus* was isolated from the bile in pure culture. This patient died two days after operation. Four known female carriers remain.

Routine bacteriological examination, post mortem of all gall-bladders, is proceeding; so far *B. typhosus* has not been isolated from any case not known to have been infected during life.

(b) *Dysentery*.—Seventeen fresh cases occurred during the year.

Eleven female cases occurred, from all of whom *B. dysent. Flexner* was isolated. Absorbtion tests proved the strain to be the same in each case.

Six cases occurred on the male side. Four of these were due to *B. dysent. Flexner*, and two of a milder type, to *B. dysent. Sonne*.

Carriers.—Two female carriers of *B. Flexner* were isolated: the strain of bacillus found was identical with that of the eleven fresh cases. There are now four known carriers on the female side, and one known carrier on the male side. The routine search for carriers is proceeding systematically. The work so far seems to show that :—

- (a) Dysentery is rarely brought into the Hospital from an outside source.
- (b) Agglutination reactions of blood do not discriminate carriers.
- (c) Case-records of "dysentery and diarrhoea" not supported by bacteriological examination are of little value and may be misleading.
- (d) The excretion of *B. Flexner* in stools of known carriers is markedly intermittent and serial specimens of faeces must be strictly consecutive.
- (e) A true carrier, who has never shown symptoms of the disease, must for ever be considered suspect, despite repeated negative results.

Neuro-Syphilis.

New Admissions.—Of 191 sera examined, 17 gave positive reaction; of these, examination of the c.s.f. proved existence of neuro-syphilis in 10 cases; 9 of these being male and only 1 female.

Treatment.—18 patients were treated with tryparsamide: 2 recovered, 5 showed definite mental improvement, 7 did not improve, 4 died in the course of the disease.

Dementia Praecox.

A few cases of catatonic stupor were treated with intravenous injections of manganese chloride. Results have been sufficiently encouraging to extend this line of treatment.

Haematoporphyria.

This condition appeared in a female patient treated with sulphonal, and was found post-mortem to be associated with chronic interstitial nephritis.

Water Chlorination.

This has been carried on during the year. Fortnightly examinations of the water have taken place, and on only two occasions have organisms belonging to the *B. coli* group been present. On increase of chlorine the organisms disappeared.

Milk.

An outbreak of mastitis on the farm, suspected to be cow-pox, was investigated; the suspected virus was not isolated, being masked by a heavy secondary infection of streptococcus.

Publications.

"The Pre-Psychotic Schizoid." By Dr. S. M. COLEMAN, D.P.M.

Family and personal history of a schizophrenic male demonstrating a multiplicity of aetiological factors. (*Journal of Mental Science*, October, 1931.)

"Misidentification and Non-Recognition." By Dr. S. M. COLEMAN, D.P.M.

Two case histories illustrating Capgras' syndrome and allied states of false-recognition. (*Journal of Mental Science*, January, 1933.)

XXV.—FROM THE ESSEX COUNTY MENTAL HOSPITAL, COLCHESTER.

General Report.—By Dr. R. C. TURNBULL, Medical Superintendent.

A.—*Routine Laboratory Work.*

The routine laboratory work during the year has included the following investigations :—

Blood: W.R. and sigma reaction, 404; chemical investigations, 24; cell counts, 12; blood films (chiefly for control of malaria), 210; agglutinations, 2,016; c.s.f. routine examination, including W.R. and sigma reaction, 106; bacteriology: investigations of blood, urine, and pus, 108; urine: routine, 340; special chemical examinations, 249; sputa for tuberculosis, 30; guinea pige inoculation, 24; pleural fluids, 7; fractional test-meal, 1; autogenous vaccines, 3; microscopic sections, 700.

Research work has also been continued in the laboratory, including particularly examination of the above microscopic sections, but no important item of research has been concluded during the year.

B.—*Publication.*

"Occupational Therapy." By Dr. NORAH HAWORTH, M.A., D.P.M.
The Lancet, January 21st, 1933.

XXVI.—FROM THE GLAMORGAN COUNTY MENTAL HOSPITAL.

General Report.—By Dr. D. FINLAY, Medical Superintendent.

A.—*Routine Laboratory Work.*

Routine laboratory investigation during the year has included :—

Urine examination in 800 males and 809 females. Sputum examination in 22 males and 12 females. Pleural effusion examination in one male proved tubercle bacillus as causative factor. Blood counts frequently in a male suffering from pernicious anaemia and in 7 male cases of secondary anaemia and 1 female suffering from Hodgkin's Disease. C.S.F. Cytological examination in 2 males. Wassermann: Blood has been collected for examination by County Bacteriologist in 35 males and 10 females. Faeces: 19 male and 12 female specimens have been examined by County Pathologist in cases of diarrhoea. Nine of the cases were found to contain *B. Flexner* W.

Throat swabs for bacteriological examination in 4 male cases. One only was diagnosed diphtheria.

Blood sugar estimation in 2 male cases of Glycosuria.

B.—General Paralysis.

Following results obtained by some observers in the use of hyperpyrexial methods in treating G.P.I., six cases were given intravenous injections of a vaccine of Ducrey's bacillus. Favourable reports were attributed to this form of treatment, notably by the Norfolk County Mental Hospital in 1930.

Each of the cases treated had received no other form of therapy and as a consequence results were unclouded. All were males and were given increasing doses of "Dmelcos" vaccine. The number of rigors produced thereby was limited to six, and the dosage in each case ranged from the initial amount of 225 millions, followed by 335, 450, 550, 675, to the final dose of 675 millions bacilli. The patients tolerated the pyrexial attacks well, although in two cases mental confusion became more pronounced at the height of the attack.

The temperatures produced varied from 102.5° F. to 105.6° F., the average being 103.6° F. The summit of the temperature being attained usually about 3 hours after injection and falling to normal again 2½ hours or so later.

As all of the cases were treated in the early part of 1932, a sufficient amount of time has elapsed to warrant some conclusions being drawn as to the value of this procedure.

Wassermann reaction was positive in each case treated. Anti-syphilitic treatment was commenced in each case immediately after the series of injections. The following table summarizes the results :—

Name.	Age.	Admitted.	Rigors.	Result.
G.B.	51	1/3/29	6	Was bedridden, incontinent, demented. Slight mental and physical improvement temporarily, then deterioration. Died 23/12/32.
J.L.P.	53	16/3/29	6	No improvement. Gradual mental and bodily deterioration.
I.C.	—	1/2/31	6	Mental and physical improvement. Discharged 6/1/33.
W.H.L.	44	1/5/28	6	Condition unchanged mentally and physically.
D.B.	39	25/4/29	6	Gradual and slight mental and bodily deterioration
H.A.	42	6/7/25	6	No mental or bodily change.

It can be noted that except in case I.C., no improvement resulted from the hyperpyrexial therapy adopted and the results are by no means encouraging. Case I.C. showed definite signs of improvement before treatment and as a consequence the remission of his symptoms can be hardly attributed to it.

Dmelcos intravenously, followed by either: (a) Arseno-argenticum intravenously; or (b) Met-arseno-argenticum intramuscularly has met with some success in two cases of G.P.I. One has been discharged "relieved" recently. The other after enjoying a long remission improved in appearance and cleanliness, also brighter, had a series of seizures and died.

Sulfosin has been tried in a fairly large number of dementia praecox, and some G.P.I.'s with no appreciable improvement. Two cases of the former class improved in habits and general appearance.

C.—Epilepsy.

Nirvanol, which is extensively in use on the Continent, has been tried in several cases of epilepsy. No definite conclusions can be drawn owing to staff changes interrupting the sequence of treatment and observation.

However, it is worthy of note that two male cases, A.R. and R.C.D.—in which all customary drugs had been tried, including Bromide up to 90 grains daily—have been entirely free from seizures following its administration. The daily dose in these cases was 0.75 grains, subsequently reduced to the present dose of 0.45 grains. Case A.R. shows considerable mental and physical improvement. He is less confused and not so irritable and quarrelsome. He also does a little ward work. Both cases were subject to frequent attacks and the drug appears to be more suited to such than to those having infrequent attacks. It is not without its dangers, as some patients show a marked intolerance and rapidly develop increasing confusion and also physical weakness—consequently its use demands frequent attention to physical signs and dosage.

XXVII.—FROM THE GLOUCESTER COUNTY MENTAL HOSPITAL.

General Report.—By Dr. F. C. LOGAN, Medical Superintendent.

A.—*Laboratory Work.*—(Dr. E. N. DAVEY, Pathologist).

The following pathological investigations were made during the year :—

Blood : agglutination, 54 ; calcium, 182 ; cholesterol, 7 ; count (complete), 4 ; magnesium, 20 ; nonprotein nitrogen, 2 ; phosphates, 2 ; sugar, 38 ; sugar tolerance 97 ; urea, 5 ; Wassermann 407. C.s.f. complete, 1 ; W.R. only, 2 ; faeces : bacteriological, 74 ; occult blood, 2 ; tubercle bacilli, 1 ; milk : count B. coli and fat, 59 ; tubercle bacilli, 1 ; material for spermatozoa 1 ; nasopharyngeal swab, bacteriological, 3 ; Pus, bacteriological, 7 ; sputum, bacteriological, 2 ; tubercle bacilli only, 13 ; throat swab, bacteriological, 9. Urine : chemical, 233 ; bacteriological, 12 ; for proteose, 124. Vaginal discharge, bacteriological, 1 ; vomit, chemical, 1 ; tissue for microscopic examination, 1.

B.—*Publications.* By Dr. L. HAVILAND MINCHIN.

1. "The Significance of Urinary Proteose."

The work showed that though urinary "proteose" occurs in a high proportion of epileptics, it has no connection with the fits, and that desensitisation towards the "proteose" does not decrease the fit incidence. (*British Medical Journal*, 1932, ii, 1045.)

2. "The Blood Calcium in Idiopathic Epilepsy."

Blood calcium investigation on over 60 cases of epilepsy showed normal values to be present. It was found that variation in the tone of the autonomic nervous system had no influence on the blood calcium, which also showed no standard variation with changes in the blood sugar level. (In Press.)

3. "Blood Sugar in Idiopathic Epilepsy."

The literature on this subject has been carefully explored and some hundreds of blood sugar examinations have been made on the epileptics in the hospital, and the following conclusions have been made :—

(a) Epilepsy is associated with abnormally low fasting blood sugar levels.

(b) Those drugs which are beneficial in epilepsy exert their influence by raising the blood sugar.

(c) Natural recovery from epilepsy is associated with a rise in the blood sugar level.

(d) The glucose tolerance tests in epilepsy demonstrate hyper-activity of the Islets of Langerhans.

(e) Variations in the tone of the autonomic nervous system has little influence on the blood sugar level or on the incidence of fits. (In Press.)

XXVIII.—FROM THE HAMPSHIRE COUNTY MENTAL HOSPITAL, PARK
PREWETT, BASINGSTOKE.

Laboratory Report.—By Dr. V. LINDLEY CONNOLLY, M.C., D.P.M.,
Medical Superintendent.

The following examinations were made during the year :—

Urine : routine examinations, 1,007 ; sugar estimations, 138 ; urea estimations, 2 ; microscopical examinations, 118 ; acetone tests, 17 ; Ehrlich's Diazo-reactions, 13 ; Weis' Urochromogen tests, 13 ; investigation of the acid base equilibrium in the psychoses : ammonia, total acidity, pH, chlorides, nitrogen, 850. Blood : Meinicke turbidity reactions (macroscopic), 80 ; sugar estimations, 11 ; haemoglobin estimations, 14 ; total cell counts, 33 ; differential cell counts, 145 ; Cooke-Arneth cell counts, 140 ; examinations of slides for malarial parasites, etc., 21 ; agglutination tests : B. abortus and M. melitensis, 25 ; B. typhosus, B. paratyphosus "A" and "B", 6 ; B. enteritidis, 3 ; B. Morgan, No. 1., 5 ; B. dysenteriae (Shiga, Flexner), 5 ; urea estimations, 7 ; sugar tolerance test, 1 ; Van den Bergh reaction, 1.

C.s.f. : chemical examinations 18 ; cytological examinations 18 ; colloidal gold, 18 ; Meinicke (M.T.R.), 5 ; bacteriological examinations : urine, 8 ; faeces, 22 ; blood, 1 ; c.s.f. 1 ; pus, 11 ; water 10 ; milk, 2 ; urethral, vaginal discharges, 3 ; throat swabs, 9 ; sputa, 29 ; scrotal fluid, 1 ; pleural fluids, 6 ; tooth swabs, 1 ; skin scrapings, 4 ; gastric contents, 4 ; chemical examinations : water, 1 ; faeces 3 ; gastric contents, 4 ; pleural fluids, 4 ; histological sections, 38 ; guinea pig inoculations, 6 ; preparation of vaccines, 2 ; autopsies, 49 (51 per cent. of deaths).

The blood of all new admissions is tested with the Meinicke turbidity reaction (macroscopic) and if the result is doubtful or positive, a specimen is sent to The County Laboratory, Winchester, for the Wassermann test. Of 53 cases so examined one doubtful Meinicke gave a negative Wassermann reaction ; the others were in agreement.

An investigation is being made of the Cooke-Arneth count in the different forms of psychoses. In 42 recent admissions the index varied from 1.57 to 2.29, with an average of 1.99. This is distinctly below normal. In a number of cases the low figure was due to some form of sepsis (generally oral) and showed a rise subsequent to adequate treatment.

XXIX.—FROM THE HEREFORD COUNTY AND CITY MENTAL HOSPITAL,
HEREFORD.

Pathological and Clinical Report.—By Dr. G. W. T. H. FLEMING, D.P.M.,
Medical Superintendent.

The Pathological Laboratory was opened on May 18th, 1932. During the seven months ending December 31st, 1,329 examinations were made :

Urine : routine chemical and microscopical, 265 ; improved Benzidine test for blood, 84 (positive 5) ; faeces : bacteriological examination for enteric group, 478 ; blood : Widal tests, 76 ; Meinicke tests, 51 ; counts, 3. C.s.f. : Meinicke, 5 ; gum mastic, 5 ; colloidal paraffin, 5 ; Pandy, 5 ; Nonne Apelt, 5 ; Takata Ara 4. Bacteriological examinations : water, 60 ; sewage, 21 ; throat swabs, 7 ; sputa, 2 ; pus, 1 ; bile, 3 ; gallstones, 1 ; spleen, 1. Bacterial antigen prepared, 1,000 c.c. Specimens for museum : brains : human, 29 ; pig, 1 ; cow, 1 ; cod, 1 ; hedgehog, 1 ; chicken, 1 ; aorta, 5 ; heart, 4 ; kidney, 1 ; lung, 1 ; Meckel's diverticulum, 1 ; femur, 1 ; foetal specimens from General Hospital, 5. Histological sections, 195.

Typhoid Carriers.

The main activities of the work were concentrated on the search for typhoid carriers. It was quite apparent at the beginning that there must be a number of these amongst the patients as three cases in separate wards on the female side had occurred during 1931, and a male patient had died from typhoid in January, 1932.

The female wards were investigated first, and at the end of the year three carriers of *B. typhosus* and eight carriers of *B. paratyphosus B.* had been detected. One of these patients died from cerebral haemorrhage. It cannot be too strongly emphasized that a simple faecal examination is not sufficient, the wards have to be examined several times before anything approaching certainty can be reached. As an example of this, the patient, R.H., gave a positive result on September 1st, 1932, but another positive result was not obtained again until February 6th, 1933. All three carriers of *B. typhosus* gave a history of diarrhoea and pyrexia at some stage in their hospital history. Of the eight living carriers of *B. paratyphosus B.*, five gave a negative history, two gave a history of diarrhoea and pyrexia and one gave a history of jaundice. Two other cases from which *B. paratyphosus B.* had been isolated on one occasion only without a confirmatory second occasion and are therefore not yet regarded as carriers, gave a negative history.

The Widal reactions of these patients are very interesting. The three *B. typhosus* carriers gave agglutinations of 1/160, 1/80 and 1/50 against a *B. typhosus* suspension. Of the carriers of *B. paratyphosus B.*, six gave agglutinations of 1/320, 1/200, 1/160, 1/100, 1/100, 1/80, two gave no reaction with a *B. paratyphosus B.* specific suspension, and the two from which *B. paratyphosus B.* was only isolated on one occasion gave a positive in 1/10.

The methods used for examination of faeces were :—

In addition to MacConkey's medium and brilliant green peptone salt water, the bismuth sulphite media of Wilson and Blair have been used with very satisfactory results. The most useful technique is :—

- (1) Primary plating on MacConkey.
- (2) Emulsifying a small portion of faeces in about 25 c.c. of the modified Wilson and Blair medium described in the section devoted to the examination of sewage.
- (3) MacConkey plate from (2).

A feature of the strains of *B. paratyphosus B.* isolated is their apparent "specificity." On no occasion have group colonies been isolated from primary cultures, and subcultures have consistently yielded specific colonies only.

Dysentery.

No bacilli of Shiga, Flexner or Sonne types have as yet been found. Particular attention is being paid in respect of patients that have a past history of recurrent diarrhoea.

The following non-lactose fermenting organisms have been isolated from the faeces of patients :—

Morgan's No. 1 bacillus	...	...	...	...	3 patients
" " 7	"	"	"	"	1 "
" " 10	"	"	"	"	2 "
" " 13a	"	"	"	"	2 "
" " 14	"	"	"	"	4 "
" " 14a	"	"	"	"	1 "
Douglas and Colebrook's Group 6					1 "
" " " 8					2 "
Morgan and Ledingham's No. 14					1 "
<i>B. pyocyaneus</i>	...	...	...	...	4 "
<i>B. proteus faecalis</i>	...	...	...	...	5 "

It is our intention to investigate the relationships of these bacilli to the dysentery and salmonella groups, and with this end in view a type collection of strains is being formed.

Sewage.

The examination of the hospital sewage was begun during the year and was the subject of a communication to the medical press ("The Presence of Typhoid and Paratyphoid in Institution Sewage." Fleming, G. W. T. H., *British Medical Journal*, March 11th, 1933.)

My thanks are due to Dr. Horner, the Editor of the *British Medical Journal*, for permission to reproduce the following extracts:—

“The isolation of typhoid and paratyphoid B. organisms from sewage has always been regarded as a matter of no little difficulty. It is very largely owing to the splendid work of Wilson and Blair in Belfast and the use of their techniques that progress has been and is being made.”

“The examination of the sewage of the Hereford County and City Mental Hospital was commenced in July, 1932. Two carriers of B. paratyphosus B. had been isolated towards the end of June, and it was thought the examination of the crude sewage from the hospital might prove interesting and instructive from a public health point of view.

Collection of the sewage was made from an inspection chamber at such time as there was reason to believe the flow of bath and laundry water was at a minimum.

For the first seven examinations the solid Wilson and Blair bismuth sulphite glucose iron medium alone was used for direct plating, and in addition peptone water brilliant green cultures were subcultured on MacConkey plates. All these examinations proved negative. At this stage (August 20th) the liquid Wilson and Blair enrichment medium was introduced and proved successful at once.

The technique used was as follows:

Three solutions were made up—A, B, and C.

A consisted of:—

- 60 gms. bismuth citrate.
- 50 c.c. distilled water.
- 20 c.c. ammonia (S.G.880).

After mixing, make up to 500 c.c. with distilled water.

B consisted of:—

- 120 gms. sodium sulphite (A.R.).
- 300 c.c. distilled water.

Add 150 c.c. of A to this, and warm slightly.

C. Dissolve by warming slightly (not boil) 30 gms. sodium phosphate in 150 c.c. of a 20 per cent. glucose solution. Add this to the A B mixture and boil slightly for 1–2 minutes.

This mixture can then be kept in a stoppered bottle.

To make the liquid enrichment medium we used:

- 30 c.c. of stock A B C mixture.
- 50 c.c. of trypsinized broth.
- 100 c.c. of peptone salt water (Difco).
- 1.5 c.c. of 8 per cent. solution of ferric chloride.
- 0.1 c.c. of 1 per cent. brilliant green.
- 3 c.c. of absolute alcohol.

This mixture is divided into a convenient number of large tubes and 10 to 15 c.c. of crude sewage sown into them in proportionate quantities. These tubes are incubated for 30 hours and then small quantities are plated on Wilson and Blair solid medium.

	2.5 per cent. ...	...	...	100 c.c.
A B C mixture	...	...	...	20 c.c.
Brilliant green 1 per cent.	...	...	...	0.25 c.c.
Ferric chloride (8 per cent.)	...	...	...	1 c.c.

The plates should be incubated for a number of days and examined daily.

Typical colonies are picked off and examined in the usual way, i.e., tested direct for agglutination by slide method, subcultures being made from positive colonies for fermentation and absorption tests.

This technique is slightly modified from that of Wilson and Blair.

The results, using this technique, are as follows :—

August, 23rd, 1932 ...	...	B. typhosus isolated.
August 24th, 1932 ...	...	negative.
August 29th, 1932 ...	...	negative.
September 5th, 1932 ...	...	B. paratyphosus B. isolated.
September 6th, 1932 ...	...	negative.
September 12th, 1932 ...	...	B. paratyphosus B. isolated.
September 19th, 1932 ...	...	negative.
September 26th, 1932 ...	...	negative.
October 3rd, 1932 ...	...	negative.
October 10th, 1932 ...	...	negative.
October 31st, 1932 ...	...	negative.
November 7th, 1932 ...	...	negative.
December 5th, 1932 ...	...	negative.
December 12th, 1932 ...	...	B. typhosus isolated.

At all these examinations direct plates made on the solid Wilson and Blair's medium proved negative, although exactly the same batch of media was being used for the examination of faeces at the same time and proving successful.

During the period from June to December carriers of *B. typhosus* and *B. paratyphosus* B. were isolated on the following dates :

<i>B. typhosus</i> .	<i>B. paratyphosus</i> B.
September 2nd	June 6th, 1932
September 21st	July 20th, 1932
	August 16th 1932
	August 19th 1932
	October 11th 1932
	October 31st, 1932
	November 3rd, 1932
	November 15th, 1932

As carriers were found their stools were disinfected before being disposed of, so that the positive result on December 12th showed that there were still undiluted carriers present amongst the hospital population. Only some two-fifths of the patients had been examined up to that date.

At no time in the course of the work did colonies develop on the MacConkey plates."

Urine.

An improved test for blood in urine introduced by Ingham ("An Improved and Simplified Benzidine Test for Blood in Urine and other Clinical Material." *Biochemical Journal*, 1932, Vol. xxvi, 1124) has been tried on 84 specimens and was found positive in 5 cases.

The technique of the test is as follows :—

1. Place a small amount of benzidine (enough to cover the tip of a pocket-knife blade) on a clean white plate.
2. Add two drops of glacial acetic acid.
3. Add one drop of urine.
4. Add a small amount of hyperol (enough to cover the tip of a pocket-knife blade).

A bright deep blue colour appears immediately if blood is present, even in a very minute trace.

Urine containing potassium iodide, pus or enzymes will react to the test in the same way as with ordinary benzidine tests. If pus or enzymes be suspected the urine should first be heated to over 60° C. and cooled. No reaction with pus or enzymes will then occur.

If potassium iodide be suspected, add a drop of dilute sulphuric acid to the blue mixture and the blue colour will disappear. Then add a drop of fresh 1 per cent. starch solution and the blue colour will reappear if due to iodides but will fail to reappear if due to blood. This test is very simple, sensitive and inexpensive.

Water Examination.

The water supply to the hospital was regularly examined by a standard technique.

Pathological Museum.

A beginning was made in obtaining and mounting specimens for permanent retention for teaching purposes, etc. About 50 specimens have been added. The neurological section has had two sidelines developed, one showing the comparative anatomy of the nervous system, specimens of the brains of a pig, cow, hedgehog, codfish and hen have been dissected out for display. The other section is to show the development of the human nervous system and specimens, through the kindness of Dr. Ainslie, from the Hereford General Hospital, have been added from a 10 m.m. embryo up to a full time child.

Two interesting brain conditions were found at autopsy: one was a case of Pick's disease or circumscribed cortical atrophy, a very rare disease, and the other a case of "Webbed Brain," which it is believed is unique. Both these cases will be investigated in detail in the coming year.

Histology.

The brain of one general paralytic was examined by Jahnke's method for spirochaetes, but none were found. Sections have been cut from the kidneys and livers of all cases coming to autopsy, in addition to various other sections.

Out-Patient Clinic.

Arrangements having been made on a very satisfactory footing with the Hereford General Hospital, the Psychological Clinic was duly opened there on March 12th.

The clinic is held on Saturday mornings at 10.15 a.m.

It cannot be too strongly emphasized how greatly patients attending the clinic benefit by having access to the special departments of a large hospital.

In few cases have these patients felt any embarrassment at attending the psychological department. Their presence amongst the ordinary out-patients gives them confidence.

During the year 24 new cases attended the clinic with a total number of attendances of 134.

The types of cases attending the clinic were as follows:—

	Male.	Female.	Total.
Depression	4	3	7
Anxiety neurosis	2	1	3
Exhaustion neurosis	—	1	1
Obsessional neurosis	—	1	1
Post-encephalitics	—	2	2
Mental defectives	—	2	2
Paranoid dementia praecox	1	—	1
Schizophrenia	1	—	1
Migraine	—	1	1
Mental disorder of sense deprivation	—	1	1
Problem child	1	—	1
Epilepsy	—	1	1
Cases on trial from Mental Hospital	3	6	9

XXX.—FROM THE HERTS COUNTY MENTAL HOSPITAL, ST. ALBANS.

Laboratory Report.—By Dr. W. J. T. KIMBER, D.P.M., Medical Superintendent, and Dr. A. M. McGRATH, Pathologist.

The following tests have been carried out for the hospital during the year :—

Urices : acetone only, 31 ; albumen only, 184 ; microscopy, 45 ; routine, 321 ; cultures, 7 ; quantitative sugar, 67 ; bile, 3 ; urea, 2 ; blood, 2 ; blood : full count, 36 ; W.B.C. and differential, 19 ; urea, 1 ; culture, 1 ; W.R. 266 ; malaria, 32 ; sugar, 8 ; Widal, 7 ; c.s.f. : W.R., 21 ; routine, 23 ; culture, 1 ; sputa : T.B., 14 ; stools : T.B., 28 ; culture, 42 ; blood occult, 5 ; round worms, 3 ; vomit : blood, 1 ; throat swabs : K.L.B., 16 ; for other organisms, 4 ; nasal swabs : K.L.B., 1 ; miscellaneous : sections, 5 ; vaccines, 4 ; gastric H.C.L., 2 ; fluid from cyst, 1 ; fluid from bleb, 3 ; cultures, tonsils, 8 ; nasal (sinus), 3 ; cervical, 3 ; milk for grade " A ", 24 ; water : bacteriological, 4 ; chemical, 4 ; hardness only, 2 ; pus : ? T.B., 4 ; autopsies, 52 (79 per cent. of deaths).

Work has been continued on " pathogen " aerobic and anaerobic cultures from tonsils removed by the surgeon to the ear, nose and throat department. Very mixed growths were the usual result of the aerobic and anaerobic cultures, while the " pathogen " selective cultures were in the most cases sterile. In one instance, where there was a marked preponderance of a non-haemolytic anaerobic streptococcus, the patient was given a vaccine. She has since been discharged recovered.

Washings were cultured from the maxillary, posterior ethmoid, and sphenoidal sinuses of one patient only and all of these were sterile.

One patient was admitted with a very severe skin lesion resembling pemphigus. Her whole body was a mass of blebs which later broke down and suppurated. From an unopened bleb, cultures were taken and a variety of leptothrix grew with difficulty.

One patient was admitted to the hospital in a state of puerperal fever and with severe pyrexia. Haemolytic streptococci were grown from an intra-uterine swab and " edwenil " was given to this patient. The W.R. taken at this time was strongly positive. As the patient's clinical history gave no intimation that she was syphilitic, the test was repeated after two weeks and was then completely negative. The interesting point arises as to whether the streptococcus alone (the patient almost certainly had a blood infection at that time) caused the positive W.R. or whether the " edwenil " increased suddenly the output of anti-bodies. It is well known that in the early part of a scarlatinal infection, also streptococcal, the W.R. is some times found to be positive.

A patient who has been recognized as a carrier of paratyphoid B. since June 1930 continues to give positive stools, in some cases in almost pure culture, in others negative for para. B. One other case of para. B. infection has occurred during the year.

Four blood sugar tolerance curves have been done on cases with marked confusional symptoms, all of whom showed a transient loss of balance in their carbohydrate metabolism. Two of these gave curves which went well above the normal and the other two, though within normal limits, were above what is usually found. The striking point was the lag in return of the curve, none reaching fasting level within two hours and two of them remaining above 0.2 per cent. In all these cases the administration of 50 grms. of glucose produced a transient glycosuria.

The search for tubercle bacilli in stools continues to be extremely useful as in the majority of cases sputum cannot be obtained.

Monthly examinations of the hospital milk and water supply are now performed with almost consistently good results. The milk supplied from the hospital farm reaches Grade " A " standard.

Summary of work undertaken for the County Medical Officer of Health, etc. :—

Blood : full count, 18 ; differential, 20 ; culture, 13 ; sugar, 9 ; urea, 12 ; W.R., 38 ; Widal, 21 ; malaria, 1 ; calcium, 1 ; pleural fluid : full examination, 6 ; for T.B. and culture, 7 ; T.B. only, 4 ; animal inoculation, 1 ; c.s.f. : routine, 9 ; bacteriology, 7 ; T.B., 1 ; urea, 1 ; urines : T.B., 6 ; microscopy, 19 ; microscopy and culture, 34 ; microscopy culture, T.B., etc., 19 ; culture, 17 ; urea, 21 ; lactose 1 ; animal inoculation, 2 ; pus : for organisms, 15 ; sputa : T.B., 918 ; other organisms, 3 ; animal inoculation, 2 ; culture, 1 ; test meals, 7 ; throat swabs : for B. Dip., 61 ; guinea-pig inoculation (virulence test), 1 ; other organisms, 4 ; haemolytic streptococci, 233 ; nasal swabs, 6 ; cervical swabs, 24 ; miscellaneous : smears for g.c., 12 ; ear swab, 2 ; hair for ringworm, 3 ; vaccine, 3 ; sections, 27 ; eye swab, 3 ; milk : for grade " A ", 95 ; for T.B., 79 ; for B. Abortus, 9 ; for animal inoculation, 10 ; culture for Abortus, 3 ; cow's blood : for B. Abortus, 89 ; faeces : for T.B., 5 ; for culture, 20 ; for occult blood, 7 ; microscopy, 2 ; for worms, 1 ; water : chemical examination, 11 ; bacteriological examination, 9 ; vomit : for blood, 1 ; bile : ? infection, 1 .

The examinations undertaken for outside authorities have covered a fairly wide range of clinical pathology in addition to the usual type of work undertaken in laboratories working for Medical Officers of Health. They show an increase of 87 per cent. over the work for 1931.

Of the sputa 16.7 per cent. have been positive and of the throat swabs for K.L.B. 18 per cent. One virulence test only for K.L.B. has up to the present been required by local authorities.

The Maternity Home at Watford, under the Hertfordshire County Nursing Association, have had the throats of the staff swabbed monthly for haemolytic streptococci as a routine measure and such streptococci have been found in larger or smaller numbers in 12.4 per cent. of these swabs.

Among the milks examined for Grade " A " standard 90 per cent. have passed. The microscopical search for acid alcohol bacilli in milk has provided 2.5 per cent. positives. Of the guinea-pigs inoculated for tubercle bacilli in milk 3 (or 33 per cent.) developed tuberculosis ; 2 of these after inoculation with the milk of Grade " A " herds. During the year the laboratory has become approved by the Ministry of Health for the biological testing (guinea pig inoculation) of milk for local authorities.

A large number of agglutination tests have been performed on cow's blood and on milk in a search for bovine carriers of B. Abortus. A fair number of these animals have given very high agglutinations, in some cases beyond 1 in 1,000. A few experiments have been carried out in inoculating milk obtained in as sterile a manner as possible on to various types of media in an endeavour to determine how early after an abortion the milk contains B. abortus. So far these experiments have not met with success owing to the difficulties of growing this organism. I have to thank Capt. A. C. Wilson, M.R.C.V.S., of Berkhamsted, for his interest in this matter and for his assistance in obtaining suitable milk for these tests.

XXXI.—FROM THE LEICESTERSHIRE AND RUTLAND MENTAL HOSPITAL.

General Report.—By Dr. K. K. DRURY, M.C., D.P.M., Medical Superintendent.

Laboratory Work.—During the year the laboratory findings continued to be of great value. The following summary shows the work carried out :—

Urine : routine examinations, 325 ; faeces : culture, 292 ; for T.B., 43 ; for occult blood, 7 ; sputum : for T.B., 39 ; blood : M.K.R., 253 ; quantitative sugar estimations, 12 ; counts (R.B.'s, W.B.'s, Hgbn., etc.), 17 ; swabs, etc., for culture, 75 ; Sections for histological examination, 99. Fifty-four post-mortem examinations were made out of a total of 72 deaths, a percentage of 75 per cent.

Towards the close of the year the new X-ray installation came into use, and already has proved of value. Fifty exposures have so far been made, a number for testing purposes, but others for sinus, lung, and bone examinations.

Dementia Praecox.—During the latter part of the year nine cases of dementia praecox were selected and given pyrexial treatment by T.A.B. vaccine. All were degraded and troublesome. Two cases have reacted well to treatment, and are now quiet and have ceased to destroy clothing and break windows. The investigation is proceeding.

XXXII.—FROM THE KESTEVEN COUNTY MENTAL HOSPITAL, SLEAFORD.

Laboratory Report.—Communicated by the Medical Superintendent.

The following is a summary of the investigations carried out during the year. :—

C.S.F. : Wassermann, Lange, cells and protein, 11 ; blood : Wassermann, 44 ; Widal, 45 ; Kahn, 24 ; malarial films, 13 ; sugar, 6 ; counts, 3 ; bacteriological : faeces, 10 ; sputum, 6 ; swabs, 3 ; tissues : histological, 2 ; urines : general, 706 ; microscopic, 16.

XXXIII.—FROM THE MIDDLESEX COUNTY MENTAL HOSPITAL, UPPER Tooting, S.W.17.

Report on Research.—By Dr. R. WORTH, O.B.E., Medical Superintendent.

During the past year further research work has been carried out with sulphur injections, in order to study the pyrexia and leucocytosis which these preparations induce.

The results of the research have been embodied in an article printed in the *Lancet* of August 20th, 1932.

In addition, an investigation has been undertaken of the cerebro-spinal fluids of a series of cases of mental disorder, to ascertain any variations in the quantity of reducing substances present, particularly galactose, in the different clinical types.

Sixty cerebro-spinal fluids have already been examined, and the investigation is being continued.

XXXIV.—FROM THE MIDDLESEX COUNTY MENTAL HOSPITAL, NAPSURRY.

Report of Clinical and Pathological Investigations.—By Dr. A. O'NEILL, O.B.E., Medical Superintendent.

Laboratory Work.—The following is a summary of the investigations carried out in the laboratory during 1932 :—

Routine examination of urine of all new admissions, 620 ; bacteriological intestinal cultures, 33 (21 being for enteric organisms) ; urinary cultures 38 (21 being for enteric organisms) ; blood cultures, 4 ; pleural fluid cultures, 4 ; joint fluid cultures, 5 ; dental cultures, 2 ; throat swabs, 3 ; sputa, 31 ; biochemical, non-protein nitrogen, 5 ; serological : Widal's, 2 ; Wassermanns : blood, 441 (of these 14 males and 12 females gave positive reactions) ; c.s.f., 30 ; colloidal gold test, 30 ; globulin estimation, 30 ; cell count, 30 ; blood counts (complete), 10 ; post-mortems, 155 (92 per cent. of deaths) ; sections cut, 282 ; additions to museum, 35 ; X-rays, 89 (including dental).

The Pathological museum is now completed.

Investigations were continued on the pathological changes of the endocrine organs in mental disease and it is hoped to publish the results shortly.

General Paralysis.—During the last 7 years all cases of general paralysis of the insane admitted to Napsbury have been treated by intravenous injections of T.A.B. and N.A.B. with the following exceptions:—

1. Moribund patients.
2. Those with free aortic regurgitation.
3. Those whose relatives objected to the treatment.
4. Some of those who had previously been treated with malaria.

Each course of treatment has consisted of 7–10 injections of T.A.B. on alternate days and about 1 gram of N.A.B. The T.A.B. injections began with 0·1 c.c. and the dose was increased each time. Some cases received 2 or 3 courses. A temperature of 102–105 was usually reached within 3 hours, a rigor occurring in $\frac{1}{2}$ –2 hours in most cases. No ill or dangerous effects were noted, in marked contrast to malaria. Only one case died less than 1 month after the first injection.

	Percentage.
Total number of cases treated ... 42	
Discharged recovered ... 10	24
Discharged (on Petition) relieved ... 2	4
Still in hospital ... 7	17
Dead ... 23	55
Total number showing remissions... 26	62

All the above were well marked cases of G.P.I. In all cases the blood Wassermann reaction was positive, and in most of them the c.s.f. was taken and showed the typical changes of the disease.

XXXV.—FROM THE OXFORD COUNTY AND CITY MENTAL HOSPITAL.

General Report.—By Dr. T. S. GOOD, O.B.E., Medical Superintendent.

A.—*Routine Examinations.*

The routine examinations of specimens sent from the wards continued on the same lines as in previous years, particular care being taken to achieve as closely as possible a running connection between the clinical symptoms of the patients on the one hand and the findings of the laboratory on the other. The therapeutic advantages gained from this procedure have formed the subject of remarks in a previous report. It is our guiding principle to aim not so much at a wholesale increase in the number of examinations, which often tends to produce a somewhat indiscriminate interpretation of results, as at the following up of the changes occurring in the individual patient.

The total number of examinations carried out during the current year was as follows:

Urine, 1,174; blood, 190; c.s.f., 116; sputum, 32; faeces, 6; microscopical sections, 212; post-mortem examinations, 42 (65 per cent. of deaths.).

B.—*Research.*

Encephalitis Lethargica.—The study of encephalitis lethargica has continued to occupy our time and attention. Though acute cases of that disease have not come under our survey during the current year, microscopical sections from some of the post-mortem examinations have shown features of interest. The translation and adaptation of the late Professor Economo's monograph on encephalitis lethargica which has been undertaken here and which appeared in *Oxford Medical Publications* has met with a very favourable reception in the English and American medical Press. A new term, "intermittent progressions," has been introduced into medical nomenclature and has already been applied by other workers. It

may on superficial consideration appear superfluous to insist on the importance of a new term which aims at describing an already known phenomenon, were it not for the fact that often these phenomena, which may be of considerable practical and theoretical importance, are forgotten or overlooked on account of the lack of a satisfactory label. Such appears to be the case with regard to "intermittent progressions." We define them as follows. "Intermittent progressions" are events in the course of a chronic condition consisting of an aggravation of the symptoms characterizing the latter condition. The onset of that aggravation is generally subacute, its termination well marked. The practical result and aftermath from a clinical point of view show us the patient in a worse chronic condition, carrying on in that state till the next "intermittent progression" occurs, which may or may not be the case. The theoretical implication is the temporary reactivation of a definite pathological factor which occurs in a virus disease of the central nervous system as is presumably the case in encephalitis lethargica. The pathological factor in question may concern the assumed virus in its varying conditions or a change in the susceptibility of the nerve-cells or a combination of those two possibilities, or a factor of an entirely different order outside the ken of our present knowledge. Without in any way attempting to draw hasty conclusions which may only prejudice the position, it may appear a curious fact that in such a disease as dementia praecox we meet with episodes which bear a marked resemblance to what we have attempted to describe as "intermittent progressions." We hope to be able to give a short account bearing out these contentions.

Serological behaviour of the Cerebro-spinal Fluid.—The researches into the serological behaviour of the cerebro-spinal fluid are being continued. An account of the results so far achieved has been published this summer in the *Zeitschrift für die gesammte Neurologie und Psychiatrie*, vol. 140, parts 1 and 2. It may be of interest to give a short summary of that paper. Cerebro-spinal fluid, normal and pathological, was emulsified with human cerebral cortex through rapid shaking at 37° C., and the emulsions obtained examined with regard to their gold-sol reaction, their glucose content and their surface-tension. A hitherto unknown property of the cerebro-spinal fluid consisting in the fact of its ability to produce a very marked fall of surface-tension in cerebral emulsions as compared with the fall produced by emulsifying with physiological saline solution has been ascertained. The view of a functional importance of this fact has been expressed. Further was described a relative "protective" action of normal cerebral cortex as compared with paralytic cortex in respect of the gold-sol reaction and possibly glycolysis. And, finally, an account was given of a surface-tension phenomenon described as "stepping" which occurs not only in paralytic cerebro-spinal fluid but also in the blood-serum of cases of progressive paralysis.

Anthropometrical Measurements.—Measurements according to Kretschmer, following with some modifications the technique of Wertheimer and Hesketh, have been and are being carried out on all available cases not only inside the hospital but also on out-patients. The results obtained so far are very encouraging and appear to be of demonstrable clinical value subject to the application of statistical methods.

C.—Publications.

"Some Legal aspects of mental disease." *The Practitioner*, December 1932; "The Danger in our Midst—Crime and Mental Abnormality." *Howard Journal* for 1931; and "The Psychology of Crime." *British Psychological Journal*. By Dr. THOS. S. GOOD.

XXXVI.—FROM THE SALOP COUNTY MENTAL HOSPITAL.

Report of Clinical and Pathological Investigations.—Communicated by
D. W. STANLEY HUGHES, Medical Superintendent.

A.—*Laboratory Work.*—By Dr. HUGOE MATTHEWS, Pathologist.

The laboratory is of recent origin. Primarily initiated to enable an exhaustive hunt for paratyphoid dysentery carriers to be carried out, it was deemed advisable to extend its sphere to general routine work taken on in the year. It is now equipped; and, in addition to ordinary equipment, material and licences to cover animal work have now been acquired.

A certain amount of time has been spent in getting under way and in working out a convenient routine.

Work done is as follows:—

Carrier investigations: 886 sets of tests (cultures agglutinations, etc.). General pathology:—(a) routine admission test—faeces: culture, 138; c.s.f. analysis, 16; blood tests 42; (b) special cases—faeces: culture 18; other examinations 2; blood tests: serum 16; biochemical 2; cultural 2; counts 8; urine cultural tests 5; c.s.f. general examinations. 9. Work done on milk and cattle: milk tests for general quality and organisms 27; examination of cow faeces for Johnis disease, 39; guinea-pig test for milk T.B., 27.

There has been little time to carry out any research work to completion. The application of complement-fixation methods to the problem of maintaining a T.B. free milk supply has been entered upon, and a combined programme of clinical and pathological work is being formulated ready for the coming year.

B.—*The Psychoses complicating Mental Deficiency.*—By Dr. K. M. RODGER, D.P.M.

An investigation of the psychoses complicating mental deficiency has consisted of a critical examination of the history of the male admissions to Salop Mental Hospital in the years 1927–1930 inclusive, the standard of deficiency being intellectual retardation of at least two years at school, together with financial or social inadequacy as adolescents or adults.

This investigation showed that, apart from cases of frank mental deficiency, 8.9 per cent. of the total male admissions were suffering from mental deficiency complicated by one or other of the psychoses. This 8.9 per cent. of the total male admissions represents 21 per cent. of the male admissions under 45.

The complicating psychoses were:—

	Per cent.
Schizophrenia (mainly simple)	80.80
Paraphrenia	3.84
Epileptic Psychosis	3.84
Manic Depressive Psychosis	11.52

XXXVII.—FROM THE STAFFORD COUNTY MENTAL HOSPITAL,
BURNTWOOD.

Report of work carried out by Dr. Wm. Jos. Kirwan and Mr. Sale.—
Communicated by Dr. WILLIAM REID, Medical Superintendent.

Examinations in the laboratory during 1932 numbered 1,307, as follows:—

Faeces: for typhoid and dysentery, 440; for tubercle, 12; urines: for typhoid, 44; abnormal constituents, 265; blood for Wassermann reaction, 157; complement fixation (tubercle), 5; agglutination tests (various), 11; malaria, 49. C.s.f.: for gold curve tests, 25; for cell counts, gum-mastic, Boltz, Pandy and Nonne Apelt tests, 25. Sputa for tubercle, 31. Nose and throat swabs for diphtheria, etc., 120. Drinking water for organisms, 31. Cows' blood for Brucella Abortus, 12. Animal inoculations: milk for tubercle, sputa for tubercle, and diphtheria for virulence, 29. Other examinations: P.M. specimens, vaccines made, blood counts, etc., 76. 85 post-mortems (91 per cent. of deaths) were made during the year.

Three female patients were regarded as typhoid carriers during 1932. Two of these gave positive results in their faeces at various times throughout the year. All specimens of urine examined from these 3 cases were negative.

A.D., female, admitted December 11th, 1931, having had occasional fits, frequent vomiting and headache for 3 years previously, also mental excitement and confusion for the previous 14 days. By February 5th, 1932, she had diplopia, vomiting, convulsive fits, was drowsy and irritable. Blood Wasserman \pm — c.s.f.—28 cells per c.mm. Globulin increased. Wassermann + + — — Gold Curve 0011220000. Acetic anhydride slight positive.

From February 23rd, 1932, she was given Tryparsamide weekly and hydrarg. perchlor. with pot. iodide daily. On March 20th, 1932, she had a severe convulsive attack lasting 2 hours with signs localizing the cerebral lesion, and relieved by lumbar puncture. Thereafter she improved and tryparsamide was discontinued on April 3rd, 1932, when she complained of dimness of vision. Mercury and iodide were continued in alternate weeks. By September 1st no ocular abnormalities could be seen, and her mental state was cheerful and intelligent. On September 14th, 1932, her Wassermann in the blood was still + + No vomiting or fits had occurred after April 20th, 1932. She was discharged "Recovered" on October 10th, 1932, after a month's trial.

XXXVIII.—FROM THE STAFFORD COUNTY MENTAL HOSPITAL, CHEDDLETON.

Report on Laboratory Work.—By Dr. W. F. MENZIES, F.R.C.P., Medical Superintendent.

A.—*Routine Work.*

Blood : W.R., 328 ; agglutinations for B. Flexner and T.A.B., 783 ; urea, sugar, Van den Bergh and culture, 30 ; complete differential count and haemoglobin, 69 ; malarial films, 76. C.s.f. : W.R., C.B., globulin and cells, 101. Sputum : T.B. and other organisms, 39. Sera : for T.B. complement fixation, 12. Faeces : Flexner and T.A.B., 1,376 ; T.B., 206 ; ova, worms, etc., 13. Pus and swabs cultured, vaginal, cervical, throat, 21. Partial test meals, 24. Hair, epidermal scales, etc., 10. Urines : routine chemical, including Reinsch, 1,198 ; cultured, 11. Vaccines (bottles of 50 c.c.) : sensitized Flexner, 150 ; other, 22. Cattle tested, intradermal T.B., 126. Milk cultures, 22. Animal inoculations, 35. Histological : paraffin blocks : tissue, 135 ; brain, 258 celloidin blocks : brain, 48.

B.—*Intestinal Spore-bearing Bacilli.*

Some preliminary work has been done on the study of the intestinal spore-bearing bacilli preliminary to the investigation of : (a) their incidence in different forms of mental disorder ; (b) their influence, if any, on the human organism ; (c) methods of removal of the spore-bearers themselves from the body and/or the counteraction of their possible toxic properties ; (d) the results of (c).

That some spore-bearers do have some influence on the body tissues and are not merely casual inhabitants of the intestine we are encouraged to believe as the result of serum agglutinations performed. One bacillus which we are not at present prepared to identify gave a positive agglutination with serum taken from several cases of Recurrent Mania in dilutions as high as 1/5,000.

Work in this branch of bacteriology must of necessity be slow and painstaking. The difficulty of obtaining constant pure cultures of spore-bearers is well known and has indeed been the despair of many. So far, however, our results have been encouraging.

C.—*A Sensitized Anti-Dysentery Vaccine.*

The whole hospital, with the exception of one ward, has been inoculated with a sensitized anti-dysentery vaccine. Three weekly injections were given in most cases, the maximum dose being 4,000 millions of *B. dysenteriae* Flexner, types W, X, Y and Z. In spite of the huge doses no unduly severe reactions were noted. Indeed, although a number of patients objected to the injections for one reason or another, none objected on account of the reaction.

One ward is being used as a test of the immunity produced as measured by serum agglutinations. The first course is to be followed four months later by a single maximal dose. Subsequent injections will be given at intervals to be determined on reflection. If they are favourable, our results may be worth publishing later. It would be premature to prejudge the prophylactic value of the vaccine by a recent outbreak of dysentery.

XXXIX.—FROM THE SURREY COUNTY MENTAL HOSPITAL, BROOKWOOD.

Report on Laboratory Work.—Communicated by the Medical Superintendent.

The following is a summary of the routine laboratory work carried out during the year:—

Urines: routine, 2,100; special: bacteriological, etc., 30. Blood: counts, 4; malarial films, 125. P.M. examinations, 59 (i.e. 55 per cent. of deaths). Organs cut and stained, 1. Sputums, 32. Carried out at Royal Surrey County Hospital: Widal's, 3; swabs, 62; faeces, 2. Carried out at St. Thomas' Hospital: c.s.f.'s, 18; Wassermann, 220.

XL.—FROM THE EAST SUSSEX COUNTY MENTAL HOSPITAL.

Report of Clinical and Pathological Investigations.—By Dr. GEOFFREY SHERA, M.A., Pathologist.

The total output of the department has increased in respect of work for the Mental Hospital, and decreased as regards external work for the County Public Health Authority.

	1931	1932
Hospital examinations	2,687	3,159
County examinations	2,114	1,409

The decrease in County work is chiefly in respect of milk samples for tuberculosis.

As from January 1st, 1933, arrangements came into operation whereby certain clinico-pathological work for the Public Assistance Hospitals in the East Sussex area is diverted to this department.

Infective Diseases. There were only two cases of dysentery during the past year, one mild one in February, due to a comparatively rare organism of mild virulence in adults (*B. dysentery* Sonne), and one fatal case in December due to *B. dysentery* Flexner, our usual invader. There was no spread of the disease, thanks to prompt local measures.

A number of cases of scarlet fever occurred and diagnostic throat cultures were found useful in some of these.

The following is a summary of examinations during 1932:—

Hospital Work.—Urines: routine, 1,184; special (bacteriological, fermentation tests, etc), 86. Faeces: bacteriological, 634; special (occult blood, differential fats, etc.) 9. Bloods: Wassermann tests (M.R.C. No. 3 method), 257; bacteriological culture, 6; complete counts, 21; partial counts, 154; films for malarial parasites, 4; sugar estimations, 7; urea estimations, 1; Van den Bergh reactions, 2; agglutinations (per organism

448; complement fixation (Tuberculosis), 61; sedimentation tests, 1; alkali reserve (Van Slyke estimations), 1. Bacteriological, swabs and cultures, 149; sputum examinations (T.B. and others), 40; post-mortems (62.76 per cent. of deaths), 59; organs cut and stained, 10; organs mounted for museum, 6; vaccines (autogenous), 4; pleural fluid (cytology and culture), 1; hairs for ringworm, 2; stream water for bacteriology, 8; sewage effluent chemical analysis, 3; biological test for T.B. (sputum), 1. Totals: 1932—3,159; 1931—2,687.

County Work.—Tests under Tuberculosis Order (1925): biological, 5; microscopical, 13; cultures, 3. Tests under Milk and Dairies' (Consolidation) Act: biological, 302; microscopical, 343. Tests for Public Health Authorities: sputa for tuberculosis, 575; swabs for diphtheria, 100; milk (four samples), 12; faeces, 4; blood tests, 22; pleural fluids, 9; urines, 10; vaccines (autogenous), 1; other tests, 8. East Sussex National Health Insurance Committee: vaccines (autogenous), 2. Totals: 1932—1,409; 1931—2,114.

Research Work.

The following items of research were undertaken:

(a) *B. Aertrycke infection (food poisoning or Salmonella group infection).*

In view of the small group of cases of Salmonella infection occurring sporadically in 1931, it was thought advisable to ascertain whether a series of new admissions showed any evidence of blood changes due to recent or remote infection of this kind. The following very interesting results were obtained:—

Of 148 cases whose bloods were tested:

- 6 cases (4 per cent.) were positive at 1/25
- 4 cases (2.7 per cent.) were positive at 1/37
- 2 cases (1.37 per cent.) were positive at 1/50
- 1 case (0.67 per cent.) was positive at 1/250.

The last-mentioned case must have been very recently infected, and the others some considerable time ago, but it is striking that in such a series of new admissions no less than 8.74 per cent. do show evidence of past infection with Salmonella group bacilli. It is not surprising therefore that sporadic cases and outbreaks may occur. Attention has been drawn to the necessity for vigilance in mental hospitals in regard to these organisms in a publication referred to at the end of this report. The fact that we have been free from cases of this type since December, 1931, seems to indicate elimination of the source of infection, which is more usually due to certain articles of food rather than to carriers. The cases are clinically likely to be mistaken for dysentery, but the bacteriological diagnosis is important, otherwise much expensive dysentery serum might be fruitlessly used.

(b) *Sulfosin treatment of dementia praecox.*

Control blood tests have been performed after each injection in a series of cases of dementia praecox under sulfosin treatment at the hands of the medical officers, to ascertain the efficacy of the injection in producing favourable reactions.

(c) *Sewage Effluent.*

Further tests under this head have been undertaken.

(d) *Malarial treatment of general paralysis.*

Examination of cerebro-spinal fluid before and after malarial treatment has been undertaken when so requested. There are indications of improvement in nearly all, but these are not very marked. Fortunately, clinical improvement may occur apart from serological improvement, but not invariably.

(e) B. dysentery (Sonne).

In February last, one male case of clinical dysentery occurred in which this organism was isolated and confirmed by specific agglutination tests. The disease was mild and the patient recovered.

A series of 141 new admissions were tested for evidence in the blood (agglutinins) of present or recent infection so as to detect carriers, happily with negative results throughout.

(f) Undulant fever (Brucella abortus).

On the same series of specimens, similar tests were carried out for undulant fever (which has appeared in the district and is associated with contagious abortion in cattle) with negative results. No cases of undulant fever have occurred in the hospital to our knowledge.

(g) Cerebro-spinal fever carriers.

A series of 49 new admissions were swabbed for cerebro-spinal fever (as sporadic cases were known to have occurred locally), with uniformly negative results. It was not thought worth while to continue the investigation. No cases of cerebro-spinal fever have occurred in the institution, but the investigation was in the nature of a precautionary sampling for carriers.

(h) Salvarsanized serum in general paralysis.

No further cases have been submitted to this treatment. Of the six cases described in last year's report three remain, so far as we know, in good health without relapse. Two advanced cases died, and one improved, but had to discontinue treatment owing to arsenical intolerance; she subsequently relapsed partially and was transferred to another mental hospital. The recovery rate in this series is therefore 50 per cent. It might be mentioned that during 1932 two out-patient early general paralytics have been similarly treated at the Princess Alice Hospital, Eastbourne, with complete mental recovery. It is earnestly hoped that further cases will be submitted for this line of treatment when opportunity arises. It may be added that serological improvement is usually more marked in these cases than in malarial treated cases.

(i) Whole-blood injections in epilepsy.

Dr. Krausz, at my suggestion, has tried this form of therapy, and has found the following results in four cases:—

(a) The average number of fits in the previous eight months was seven per month. A series of ten weekly whole-blood injections were given (extracting the blood from a vein and re-injecting it). When the injections were first started the fits increased to 21 per month, but in the following three months diminished to none per month, and since average about seven again. There has, however, been considerable mental improvement, and the patient, who was of little use as a worker, is now a useful and willing worker.

(b) The average number of fits before treatment was seven per month, and after, four per month. Mental improvement and improvement in working capacity are very definite.

(c) The average number of fits before treatment was three per month, and after, two per month. Confusion after the fits was of much shorter duration, and mental improvement and improvement in working capacity are definite.

(d) Treatment was discontinued after two injections, owing to anatomical difficulties.

The series is a very small one, but suitable cases are not numerous. There is no risk to the patient, who merely receives injection of his own blood, and no unpleasant sequelae. A further series is to be tried. Early cases are the most suitable.

I should like to express thanks to the two technical assistants, Mr. Wallace Reed and Mr. J. D. Flawn, for their help and unremitting keenness during the past year.

Publication.

"Five cases of Salmonella infection in a Mental Hospital." *Journal of Mental Science*, October 1932, pp. 935-8, being a report to the Infectious Diseases Sub-Committee of the Research and Clinical Committee of the Royal Medico-Psychological Association.

XLI.—FROM THE ISLE OF WIGHT COUNTY MENTAL HOSPITAL.

General Report.—By Dr. CHARLES DAVIES-JONES, Medical Superintendent.

Three steps of importance from the point of view of Clinical Investigation and research have been taken at this Hospital during the past year. These are :—

(a) *Out-patient Treatment.*—The formation of the "Mental Welfare" Clinic to afford a suitable means of out-patient treatment of the neuroses and early psychoses. Two sessions are held weekly, one at Newport and one at the Royal Isle of Wight County Hospital, whose Committee most kindly have given generous facilities.

So far the results have been encouraging. A total of 92 patients have been seen, 292 attendances recorded and 57 sessions held. Admissions from the Clinic to the Mental Hospital fall into the following categories :

Voluntary 6
Temporary 2
Certified 6

(b) *The Laboratory.*—A laboratory has been installed at the Hospital. The call for rigid economy in expenditure was not the least of the difficulties which arose in this relationship. The Committee extended every encouragement. An empty room adjoining the mortuary has been connected up to the water and electric systems. Primus and petrol Bunsens replace gas supply. It has already been possible to examine malarial blood films and to co-operate with the M.O.H. by carrying out many of the Widal tests as a consequence of the occurrence of three cases of enteric fever.

Dr. Thomas Beaton, O.B.E., most kindly has undertaken to have Lange gold-sol investigations carried out at his hospital. These are also done concurrently here and errors in technique are slowly being eliminated with a result that our results are approximating to his.

(c) *"Open Door" Wards.*—Out of nine wards, seven are now administered upon the "Open Door" principle. This has afforded scope for research and already it is noticeable that noise and restlessness have abated. Of particular interest is the fact that the two serious efforts at escape made during the year were from locked wards.

Malarial Therapy in General Paralysis.—The first case of general paresis to be treated at this hospital by induced malaria has been discharged, and while undergoing arsenical treatment, is now earning a living. This case was undoubtedly an early one, originally admitted as a voluntary patient from the clinic but later requiring certification. It is too early to make any definite statement, but the confines of the Island afford such easy means of supervision that the case will not be lost sight of. Of two further admissions, one has been unsuccessfully inoculated with malarial blood and the process is to be repeated. The other is clinically more suggestive of tabo-paresis (although c.s.f. examinations are in favour of G.P.I.). A preliminary course of mercury and iodides is being exhibited prior to malarial inoculation.

Routine Examinations.—Routine examinations, apart from urines, have included 9 malarial blood films, 8 Pandy's globulin estimations, 7 Lange gold-sol tests, 14 Widal's and 22 microscopical sections. Post-mortem examinations numbered 11 (42 per cent. of the deaths).

XLII.—FROM THE NORTH RIDING MENTAL HOSPITAL, YORK.

Laboratory Report.—Communicated by the Medical Superintendent.

The following is a summary of the laboratory investigations carried out during the year :—

Bacteriological examinations : faeces and urine, 2,278 ; swabs, sputa, etc., 49. Meinicke W.R., (blood and c.s.f.), 123 ; Widal tests, 461 ; blood counts, 31 ; blood sugar estimations, 30 ; urine (routine examinations), 1,355. Post-mortem examinations were held on 16 females and 28 males (69 per cent. of the deaths). In the cases of 3 females and 4 males, gallstones were present. In one case only, a male, *B. typhosus* was found. This patient suffered from enteric fever in 1923, and had remained negative to frequently repeated tests for 10 years.

XLIII.—FROM THE BRISTOL CITY MENTAL HOSPITAL.

General Report.—By Dr. E. BARTON WHITE, Medical Superintendent.

A.—Pathological and Biochemical.

During the year 1932, 1,999 examinations were made, representing a slight increase on the figure for the previous year. The following is a summary :—

Urines : routine, for abnormal chemical and cellular constituents, 1,402 ; blood : total counts, 72 ; malarial films, 29 ; Widal reaction, 13 ; Wassermann reaction, 302. C.s.f. complete examinations, i.e. cell count, protein content, chloride content, Lange curve and Wassermann reaction, 41 ; faeces : bacteriological, 19 ; sputum examinations, 30 ; other cultural examination, 4. Post-mortem examinations, 72 (i.e. 79.1 per cent. of all deaths). Histological examinations, 15.

B.—Clinical.

1. A Case of Pellagra.

A fatal case of pellagra (the third occurring at the hospital within 5 years) was investigated and formed the subject of a communication to the April Meeting of the R.M.P.A. The case was later published in the *Journal of Mental Science*, October, 1932.

The patient, a woman of 26, was admitted in 1928 for delusional insanity ; strong family history of insanity and tuberculosis. The patient herself had been under sanatorium treatment for early phthisis, and had had a "nervous breakdown" 14 months before admission. Physical condition very poor, with intermittent mild pyrexia and signs of tuberculous disease at left apex. Blood and urine examinations showed no gross abnormality. Mentally she was dull, negativistic with periods of hallucination. Reflexes normal, but pupils were dilated and sensation in the limbs appeared below normal.

Physically there was some improvement during the 18 months following admission, and the pulmonary condition remained stationary, but negativism, including refusal of food, persisted, and in spite of periods of enforced feeding by tube there was a steady decline in weight. In July, 1931, during verandah treatment, the light dermatitis characteristic of pellagra first appeared on the exposed skin, and subsequently all the cardinal features of the disease rapidly developed, viz., stomatitis, diarrhoea, and sensory nervous symptoms. Emaciation became extreme in spite of a special dietary calculated to restore vitamin deficiency, and after septic absorption from the infected skin lesions death occurred two months after the onset of the dermatitis.

The case described was of unusually short duration, and by the time the diagnosis was established treatment proved to be without effect. The important point which emerges therefore is that it is advisable to regard all mental patients who refuse their food as potential pellagrins, and to anticipate the possible approach of the disease by carefully revising their dietary so as to ensure an adequate protein and vitamin content.

In the present case the markedly atrophic condition of the bowel wall demonstrated post-mortem suggested that the intestinal lesions had been present much longer than was suspected on clinical grounds, while histologically the cord changes, though mild, were quite definitely of chronic type.

2. *Malarial treatment of General Paralysis.*

The preliminary findings were briefly reviewed in last year's report and formed the subject of a communication to the April meeting of the R.M.P.A. and a paper in the *Journal of Mental Science* (July 1932). Out of a total of 33 treated cases, definite improvement was noted in 15, or 45 per cent., and of these 5 were discharged and 4 are still quite well and in useful employment several months later. Laboratory investigations of the blood and cerebro-spinal fluid before and after treatment showed a small average fall in protein and cells and very definite reductions in Wassermann and Lange reactions. From histological examination of two brains from patients dying under treatment, in which extreme congestion of the cerebral vessels was found, the suggestion was made that the flushing out of the cerebral circulation and improved oxygenation of previously starved tissues are factors contributing to the success of the malarial treatment. At the same time very numerous small haemorrhages were discovered in these brains (as compared with brains of untreated paretics sectioned as controls). These were held to indicate the considerable extra strain mechanically imposed on vessels already weakened by disease, and furnished evidence of the risk associated with malarial therapy. In spite of the immediate risk involved, however, the general conclusions arrived at were very definitely in favour of this form of treatment.

3. *Syphilis in New Admissions.*

During the last three years, routine Wassermann reactions have been performed on all new admissions, irrespective of their mental condition, and a statistical survey of the results is in progress. It is anticipated that during the present year 1,000 cases will be available for analysis. Up to the present 798 new admissions have been examined, and of these 11.15 per cent. were syphilitic. The proportion of positive reactions in males is found to be much higher than in female admissions (18.4 per cent. of 343 males as against 5.7 per cent. of 455 females); this difference does not appear to be fully accounted for by the greater number of male paretics, and the investigation in progress may throw some light on the possible rôle of syphilis in forms of mental disorder other than general paralysis.

4. *Dysentery Prophylaxis.*

The prophylactic inoculations of all patients against dysentery has been continued, and during the year 271 new admissions have received the injections. Only one case of dysentery (due to Flexner WX strain) has occurred. Simple diarrhoea was investigated in 8 other cases with negative bacteriological findings, and these quickly recovered.

The relatively low incidence of dysentery in the hospital since the adoption of prophylactic inoculation in 1929 has so far been very gratifying.

5. *Pernicious Anaemia in Melancholia.*

Three cases of the kind have occurred during the year, and all have improved considerably, both mentally and physically, under treatment with liver and liver extract. The extract used was Campolon (Bayer), which is given in 2 c.c. doses intramuscularly.

(1) W.B., male, age 46. Hypochondriacal, self-centred and devoid of all interest in his surroundings.

Blood examination showed R.B.C. 2,100,000, H.b. 50 per cent., C.I. 1.2, Whites 2,500. Typical macrocytosis and poikilocytosis in films. There was a ready response to raw liver treatment and after five months the count showed R.B.C. 4,420,000, Hb. 94 per cent., C.I. 1. Mentally there was much improvement. Since then Campolon in intramuscular 2 c.c. doses has been administered once weekly. Five months later the blood picture is practically normal and mental state shows further improvement.

(2) A.H., male age 54. Weight 7 st. 2½ lbs. Extremely depressed, would not speak, refused food. Blood examination showed R.B.C. 1,810,000, H.b. 64 per cent., C.I. 1.1, Whites 4,000. Poikilocytosis and macrocytosis.

Poor response to raw liver treatment was followed by rapid improvement to Campolon, 2 c.c. doses administered daily. His mental condition showed improvement. Three months later the blood picture is about normal, he has gained 3 stone. Mentally much improved, helps in ward work. Campolon 2 c.c. is administered weekly.

(3) G.F., male, age 57. Very depressed, agitated, hallucinated and deluded. Blood cell count showed R.B.C. 3,630,000, H.b. 80 per cent., C.I. 1.1, Whites 5,400.

Campolon 2 c.c. was administered thrice weekly at first, subsequently 2 c.c. weekly. In three months the blood picture was practically normal; his mental state cheerful, delusions less evident.

Remarks.

1. In these three cases the association of extreme mental depression with anaemia was well marked. Mental improvement followed as the blood picture approximated to normal.

2. Campolon, supplied in 2 c.c. ampoules for intramuscular injection, proved an efficient substitute for raw liver. It is easily administered, its price for effective dosage, is no greater than ordinary liver.

3. Campolon administered weekly, 2 c.c., served to maintain a normal blood cell count and picture, when once a normal state of affairs had been established. In addition Campolon treatment was tried in two cases of secondary anaemia with some success, though the mental and physical improvement was not as striking as in pernicious anaemia.

XLIV.—FROM THE CROYDON BOROUGH MENTAL HOSPITAL.

Report of Laboratory Investigations.—By Dr. H. M. BERNCastle, Medical Superintendent.

The following examinations were carried out during the year 1932 :—

Urine examinations, 989. Bacteriological examinations: stools, 28; sputa, 33; pus, 18. Kahn's test for syphilis, 41. Blood sugar estimations, 18; blood urea estimations, 12. Widal reactions, 16. Sections cut for histological examinations, 70.

Sulphosin Treatment.

An Investigation is being carried out of the value of sulphosin injections in schizophrenia; so far the result has not been encouraging, and any improvement noticed in the patients has turned out to be of an evanescent nature.

XLV.—FROM THE DERBY BOROUGH MENTAL HOSPITAL.

Report of Pathological and Clinical Investigations.—By Dr. JOHN BAIN, M.A., Medical Superintendent, and Dr. F. H. HEALEY, D.P.M., Pathologist.

A.—Pathological and Biochemical.

During the year 1932, 1,863 examinations were made, this being a further increase over 1931 and the preceding years.

Summary of examinations.

Urines: Routine, 357; special, including bacteriological, urea concentration tests, 40. Faeces: bacteriological, 18; special reactions, 23. Blood: total counts, 36; differential, 24; malarial films, 116; sugar estimations, 28; sugar tolerance curves, 4; urea estimations, 49; non-protein nitrogen, 7; creatinine, 2; cholesterol, 1; Van den Bergh, 13; Widal reaction 1; culture, 5. Blood sera for Kahn reaction, 267. C.s.f. complete examination, 161, cell count, 161; protein content, 55; globulin tests, 160; gold curve, 161; Kahn test, 144; chloride estimations, 89; sugar estimations, 20. Bacteriological swabs and cultures, 38. Sputum examinations, 21. Post-mortem examinations, 37 (94.8 per cent. of deaths). Organs cut and stained 157. Organs permanently mounted for museum, 6.

B.—Clinical.

1. *Syphilis in relation to mental disease.*—Every admission during the year 1932 has had the blood examined by the Kahn test, and the cerebrospinal fluid has been tested by at least the 4 classical tests, viz., Kahn, cell count, gold curve and globulin estimation. The results are as follows:—

Of 49 direct female first admissions, 5 gave a positive blood Kahn, giving the incidence of syphilis as 10.2 per cent.

Of 47 direct male first admissions, 8 gave a positive blood Kahn, showing the incidence of syphilis to be 17 per cent.

Table of female cases:—

Initials.	Admitted.	Age.	Blood.	C.s.f.	Diagnosis.	Result.
S.N.	16.2.32	62	+	— Luetic gold curve.	Cerebral syphilis.	Died 9.4.32.
F.W.	16.4.32	38	+	—	No activity.	Discharged 22.4.32
T.G.	3.6.32	40	+	+ Paretic gold curve	G.P.I.	Died 15.9.32
L.W.	28.7.32	76	+	—	No activity.	Died 30.1.33
H.H.	23.1.32	55	+	+ Gold curve weak paretic.	Taboparesis.	Alive.

Thus, of the bloods, 60 per cent. were neurosyphilitics.

Table of male cases:—

Initials.	Admitted.	Age	Blood.	C.s.f.	Diagnosis.	Result.
R.M.	21.3.32	63	+	+ Paretic curve.	G.P.I.	Died 12.6.32.
W.W.	20.5.32	54	+	+ Paretic curve.	G.P.I.	Died 28.6.32.
R.H.	29.1.32	32	+	+ — Weak luetic curve	Congenital syphilis.	Alive.
J.G.	11.7.32	48	+	+ Paretic curve.	G.P.I.	Alive.
J.A.G.	9.12.32	42	+	+ Paretic curve.	G.P.I.	Died 14.2.33.
J.B.	23.8.32	39	+	+ Paretic curve.	G.P.I.	Alive.
E.F.	9.11.32	43	+	+ Weak paretic curve.	G.P.I.	Alive.
J.B.	7.6.32	44	+	—	Secondary syphilis.	Discharged 8.11.32.

Thus of the + bloods, 87½ per cent. were neurosyphilitics. Many of the patients admitted prior to 1932 have also had blood and c.s.f. tested, in the attempt to make the clinical and pathological examination of every patient in the hospital complete.

The following female cases gave + results with the Kahn test in blood or c.s.f. or both, thus giving evidence of syphilitic infection and enabling the diagnosis to be reviewed and treatment administered.

A.K. Admitted January 23rd, 1932. Aged 28. Blood + 4 Kahn. C.s.f. negative. Previously admitted December 6th, 1927. Discharged November 15th, 1930. Diagnosed as suffering from congenital syphilis. Malaria given in December, 1932.

L.G. Admitted December 13th, 1906. Aged 26 (in 1906). Blood + 2 Kahn. C.s.f. negative. Diagnosis of melancholia with epilepsy, not altered.

L.H. Admitted March 11th, 1927. Aged 34 (in 1927). Blood + 3 Kahn. C.s.f. negative. Diagnosis of dementia praecox not altered. Given malaria March, 1932.

D.P. Admitted September 21st, 1931. Aged 25 (in 1931). Blood + 4 Kahn. C.s.f. + 4 gold curves luetic. Diagnosis changed from dementia praecox to cerebral syphilis. Malaria given December, 1932.

E.M. Admitted July 18th, 1927. Aged 33. Blood + 3 Kahn. C.s.f. + 2 gold curve weak luetic. Diagnosis changed from dementia praecox to general paralysis. Malaria given January, 1932.

2. *Investigation of Syphilis in Mental Defectives at Thornhill.*—Number of patients in Institution was 39. Blood was taken from each patient and submitted to the Kahn test. Of these, 11 (i.e., 28·02 per cent.) gave a positive reaction. Lumbar puncture was successfully performed on 5 of these 11. The cerebro-spinal fluid was examined with regard to cell count, globulin tests, colloidal gold reaction and Kahn test, most of the 11 had some evidence of syphilis clinically. In two the cerebro-spinal fluid pointed to a diagnosis of congenital dementia paralytica. Below are the findings clinical and pathological in the eleven cases with a positive Kahn reaction in the blood:—

N.C. (F). Aged 19. Admitted May 17th, 1929. No classical physical stigmata of congenital syphilis. Argyll Robertson pupils. Mental condition, idiot. Blood Kahn 4+ c.s.f. Kahn 4+ gold curve 555.443.321. The diagnosis of congenital general paralysis was made on the c.s.f. findings. Present condition, last stage of G.P.I.

F.W. (F). Aged 15. Admitted April 24th, 1929. Hutchinson's teeth. Rhagades. Frontal bossing. Mental condition, low grade imbecile. Blood Kahn 4+ c.s.f. Kahn 1+ gold 333.221.100. On the c.s.f. findings a diagnosis of congenital G.P.I. is suggested, but clinically the patient shows no signs of the condition. The c.s.f. in the other three patients was negative. Several of the remaining nine have stigmata of congenital syphilis.

M.B. (F). Aged 13. Admitted April 18th, 1929. Irregular teeth. Depressed bridge of nose. Deaf mute. Mental condition, idiot. Kahn 2+

D.P. (F). Aged 14. Admitted October 10th, 1930. Rhagades. Mental condition, low grade imbecile. Kahn 2+. C.s.f. negative.

A.O. (F). Aged 18. Admitted November 29th, 1929. Obese. Right hemiplegia. Cataract. Microphthalmos. "Snuffles." Depressed bridge of nose. Mental condition, idiot. Kahn 4+

D.P. (F). Aged 19. Admitted May 24th, 1929. Typical Mongolian idiot. Kahn 3+. C.s.f. negative.

D.G. (F). Aged 9. Admitted October 27th, 1931. No stigmata. Mental condition, low grade imbecile. Kahn 2+

M.L. (F). Aged 14. Admitted July 30th, 1929. No stigmata. Mental condition, idiot. Kahn 2+.

A.M. (F). Aged 18. Admitted May 17th, 1929. Hutchinson's teeth. Mental condition, idiot. Kahn 3+. C.s.f. negative.

A.E. (F). Aged 34. Acquired syphilis. Mental condition, feeble-minded. Kahn 4+.

M.N. (F). Aged 10. Admitted June 28th, 1929. Cerebral diplegia. Rhagades. Mental condition, idiot. Kahn 4+.

Incidence of syphilis in mental deficiency. There is considerable discrepancy between the results obtained by different observers. Before the introduction of the Wassermann test Ziehen found evidence of syphilis in 17 per cent. of mental defectives. With the help of the Wassermann test, Frazer and Watson found evidence of syphilis in 60 per cent. of 205 mentally defective and epileptic children. Robertson and Findlay obtained a + Wassermann in 59 per cent. of 15 mentally defective children. Tredgold has stated that the incidence varies from 15 to 30 per cent. Our figure, 28 per cent., thus conforms to the average as stated by Tredgold.

3. *Malarial Therapy*.—Malarial treatment has been continued, 15 cases having been inoculated with malarial blood taken intravenously and administered subcutaneously. On March 27th, 1932, malarial blood was sent to the County Mental Hospital, Mickleover, and on two occasions, June 9th, 1932, and November 19th, 1932, our strain has been fetched from Mickleover, the case bearing the infection in this hospital having been stopped hurriedly on account of weakness of the patients. Four male paralytics were treated—J.G., no change; J.A.G., died; J.B., no change; E.A.F., slight improvement. None has recovered sufficiently to enable discharge. One male case with secondary syphilis and melancholia (J.B.) had a course of malaria followed by N.A.B. and was discharged in November. Three female neurosyphilitics have been treated—T.G., died; E.M., no change; D.P., is improving. One female with + blood (L.H.) had malaria in March, 1932, but no improvement has yet resulted.

Dementia praecox—one male (D.T.) was treated in August, 1932, and has improved slightly since.

Three females (F.H., N.S., E.F.) had treatment but no change resulted. One female, chronic mania (F.B.) had treatment with no resultant improvement.

One female, epileptic, (D.M.E.), had a course of malaria in March with no consequent improvement.

The cases of general paralysis admitted during 1932 were too advanced to expect any remission and it is regrettable that this disease is not diagnosed earlier, when a reasonable hope of cure exists.

4. *Encephalitis Lethargica*.—Two chronic cases were admitted during the year. E.T., admitted December 22nd, 1932. Aged 25. Duration of encephalitis lethargica about 6 years. Present state melancholia with L. sided Parkinsonism and oculo-lyric crises.

M.W., admitted August 30th, 1932. Aged 31. Duration of encephalitis lethargica about 4 years. Present state—dementia with Parkinsonism and slobbering. Some of her reactions suggest schizophrenic reaction type. One acute case was admitted and gave considerable difficulty in diagnosis—E.M.W., admitted May 15th, 1932. Aged 18. Diagnosis—Acute confus. insanity with signs of organic disease of C.N.S., L. ptosis, weakness of R. side of face. Pupils active to light, not to convergence. Absent abdo. reflexes, R. ankle clonus. Blood Kahn—c.s.f. Kahn—cell count 63 per c.mm. lymphocytes. Gold curve 234, 455, 444, 300 increase of globulin. Restless at night, often somnolent in daytime. Diagnosed as acute encephalitis lethargica. Seen by Dr. Haigh and Dr. Lescher. Diagnosis confirmed. Pyrexia for 2 weeks. Given course of intravenous colloidal iodine (Crookes .4 per cent.) 10 c.c. daily for 2 weeks. Signs in nervous system gradually cleared up. Acute confusion passed off and left a mild schizophrenic picture. At the request of her relatives she was discharged in January, 1933. This case is extremely interesting and important, as very few cases of acute encephalitis lethargica have been seen or described in recent years, and also because apparent recovery has taken place. On discharge a slight degree of mask-like face was present but no Parkinsonism in limbs. S. Barnes and P. Frazer described in the *B.M.J.* for January 21st, 1932, three cases of acute encephalitis lethargica, all of which proved rapidly fatal, and resembled the 1918 cases. The importance of these four cases in the Midlands lies in the possibility of a fresh epidemic.

5. (a) *Angeioma of cerebral veins*.—C.W.G., admitted February 16th, 1929. Aged 29, as case of insanity with epilepsy, suffered frequent major attacks and died from status epilepticus on July 5th, 1932. At autopsy—the veins of the left cerebral hemisphere were greatly enlarged forming a tortuous mass of thin walled veins around the Sylvian fissure with compression of the motor area. This condition is comparatively rare. A.F. Shoyer described a case in *J.M.S.*, 1900. J. Turner described 12 cases in *J.M.S.*, 1907.

More recently cases have been described where with the angeioma there is hemiplegia and often angeiomata in skin. To this condition is applied the term Brushfield and Wyatt's syndrome and is described in the *Proc. of Royal Soc. of Med.* 1928.

(b) *Congenital heart disease with interventricular foramen*.—W.T. (M.) admitted February 1st, 1922. Aged 50. Recurrent melancholia. Died of acute heart failure on February 7th, 1932. At autopsy—heart greatly enlarged, weight 25½ oz. A deficiency was found in the interventricular septum where the muscular part growing from apex of heart had failed to coalesce with the membranous part at the auriculo-ventricular junction. It is surprising that with such a lesion an active life was possible until age 60.

These two interesting specimens have been mounted as permanent museum exhibits.

XLVI.—FROM THE IPSWICH BOROUGH MENTAL HOSPITAL.

General Report.—By Dr. P. BANBURY, D.P.M., Medical Superintendent, and Dr. A. M. MACCALLUM, Assistant Medical Officer.

General Paralysis of the Insane.

Sulphur therapy in combination with courses of tryparsamide was exhibited in a small series of cases including both sexes. The sulphur preparations used were the original sulfosin Leo and Crookes' aqueous "Colsul." This treatment was carried out as a comparison with the now well-recognised induced malaria. In only one case, a grandiose male patient, was a satisfactory remission obtained, but all the patients were in an advanced stage of the disease. It would appear from previous experience that malarial treatment followed by prolonged tryparsamide medication holds out the best hope for satisfactory results, especially in confused and expansive paretics.

Dementia Praecox.

Several catatonics were given courses of "Colsul" (aqueous) but the results, on the whole, were not encouraging. Such improvement as was noted proved very transient and it is impossible to dissociate this from the additional nursing care which the treatment involves. There would appear to be little or no relation between the size of the dose and the resultant pyrexia, e.g., in one male patient an injection of 1 c.c. produced a temperature of 105°, whereas doses up to 4 c.c. produced no pyrexia in a female catatonic.

Exhaustion and Deficiency States.

In 4 cases (all females) various well-advertized vitamin and glandular preparations from firms of repute were administered, and the results in this small series are so far sufficiently encouraging to warrant further trial.

Pathological Investigations.

These, of necessity, have been confined to routine urinary examinations, blood films and sputa. For more elaborate investigations advantage is

taken of the expert facilities freely offered by the County Laboratories and the pathological department of the Voluntary Hospital, both of which are situated within 2 miles of the Mental Hospital.

Out-Patient Clinic.

This is held once weekly at the East Suffolk and Ipswich Hospital, and during its first year of working 57 patients with 334 attendances were recorded. Anxiety neurosis was the predominant illness encountered. Several patients entered the Mental Hospital on a voluntary basis from the clinic and all did well. There can be no doubt that such a clinic will prove a most valuable adjunct to Mental Hospital activities.

XLVII.—FROM THE LEICESTER CITY MENTAL HOSPITAL.

Laboratory Report.—By Dr. T. WISHART DAVIDSON, D.P.M., Pathologist, and Dr. J. D. W. PEARCE, D.P.M., Assistant Pathologist.

Routine laboratory investigations during the year 1932 were as follows:—

Bacteriological examination of faeces, 725; culture of blood, urine, pus and exudates, 71; examination of: sputum for T.B., 74; faeces and urine, 217; blood counts, 71; Benzidine tests, urea estimations, Van den Bergh reactions, blood sugar tolerance tests, test meals, 35; Widal tests, 125; blood sedimentation tests, 19; c.s.f. examinations, 29; malaria blood films, 586; Wassermann reaction of: blood, 314; c.s.f., 29; Vernes test of blood, 311; urine examinations, 1,101; post-mortem examinations, 68 (94 per cent. of deaths); organs cut and stained, 25.

Wassermann Reaction (M.R.C. No. 1, Wyler Modification). Of the 200 patients admitted during the year, blood from 164 was examined: 36 were not submitted to the test as 21 were re-admissions and known negatives, whilst 15 died or were discharged shortly after admission.

Of the 88 females tested, 5 (5.6 per cent.) gave a positive reaction, and of the 76 males, 14 (18.4 per cent.) were positive.

The incidence rate for syphilis in the 164 patients tested was 11.5 per cent. General paralysis was diagnosed in 13 males and 2 females.

Syphilimetric Test of Vernes. Investigation was continued into the diagnostic value of this test in comparison with the Wassermann, and further records were accumulated. Of the 164 admission cases tested there was complete agreement between the two tests in 156 (95.1 per cent.). In the 8 instances (4.9 per cent.) in which there was disagreement, the variations in reading are shown in the following table:—

W.R.+	V?	5 (All clinically syphilitic—4 being general paralytics).
W.R.+	V—	1 (an elderly syphilitic).
W.R.?	V—	1 (clinically not a syphilitic).
W.R.—	V?	1

The Vernes test was used repeatedly to control specific treatment given to chronic syphilitics, and to general paralytics following malaria treatment.

Malarial Treatment of General Paralysis.—Eight males and 2 females were infected by blood inoculation; 1 patient was discharged as "Recovered," 1 as "Unimproved," 4 died, and of those remaining in hospital 2 were "Improved" and 2 "Unimproved."

Courses of injections of sulfarsénol, bismuth and novarsenobillon were invariably given following malaria.

Two of the males were voluntary patients, and were first seen at the Out-patients' Clinic.

The results up to date of the malaria treatment which was commenced in 1924 are as follows :—

	No.	Per cent.
Deaths, unassociated with malaria	40	40.8
Deaths, associated with malaria	10	10.2
Unimproved	18	18.4
Improved	6	6.1
Discharged	24	24.5
Total	98	

Included in the number of deaths are 6 patients who were discharged following treatment, but who later relapsed and were re-admitted.

Dysentery.—On the female division there were 29 cases of dysentery during the year, 21 being due to B. dys. Flex. Z, 2 to B. dys. Flex. Y, and 6 to B. dys. Sonne. On the male division there were 9 cases due to B. dys. Flex. Y.

Chronic Epidemic Encephalitis.—Treated by intravenous injections of sodium iodide (Von Economo). The notes on the following case are considered to be of interest.

A.E.T., male. Age 25. Shop assistant, attended Out-patients' Clinic on March 3rd, 1932. Chronic epidemic encephalitis of the Somnolent-ophthalmoplegic type with severe oculogyric crises was first manifested in 1922 at age of 14 years. Admitted to Hospital as a voluntary patient on March 4th, 1932, for investigation. Departed March 24th, 1932.

Attended Out-Patients' Clinic April 31st, 1932, when the administration of intravenous injections of 100 c.c.'s 10 per cent. aqueous solution sodium iodide was begun. From this definite benefit accrued, somnolence diminished, patient became more active and alert, and oculogyric crises occurred less frequently. Re-admitted as a voluntary patient on September 1st, 1932 for closer observation, and continuance of treatment. In all 24 injections were given. Ephedrine hydro-chloride, grains $\frac{1}{2}$, 3 times a day by mouth was also administered since September, 1932.

Out-Patient Clinic.—Fifty-five patients were seen during the year, 43 being new cases recommended for consultative opinion and treatment by their own doctor; and 12 being old patients, some, following discharge from the Mental Hospital, attending for anti-syphilitic treatment.

Thirty-one patients were admitted to the hospital as voluntary patients and three as certified.

The new patients seen were classified as follows: Psychoneurosis, 17; manic-depressive psychosis, 8; paranoia and paraphrenia, 4; general paralysis, 3; dementia praecox, 3; organic and senile dementia, 2; chronic epidemic encephalitis, 2; epilepsy, 1; mental defect, 3.

XLVIII.—FROM THE CITY OF LONDON MENTAL HOSPITAL.

Laboratory Report.—Communicated by the Medical Superintendent.

The following is a summary of the routine laboratory work carried out during the year 1932 :—

Analyses of urines, 910; with quantitative test, 32; blood examinations, 8; blood sugars, 1. C.s.f., 4; examination of faeces and urines for typhoid bacilli, 168. Agglutination tests, 57. Examination of sputa, 6; swabs, 7. Miscellaneous (section cutting, standardizing of disinfectants, coffee, etc.); the preparation of all medias, sugars and stains, etc.

XLIX.—FROM THE NEWCASTLE-UPON-TYNE CITY MENTAL HOSPITAL.

Laboratory Report.—Communicated by the Medical Superintendent.

The following is a summary of the examinations made during the year :

Urine : general, 280 ; bacteriological, 8. Faeces : bacteriological : *B. typhosus*, etc., 27 ; clothes and water, etc., in Laundry, 17. Blood : differential counts, 13 ; microscopic examinations for malaria, etc. 520 ; Widal reactions : (*B. typhosus*, para. A, B, and C, *B. dysenteria* (Flexner V, W, X, Y, Z, Sonne, Shiga), *B. abortus*, *B. enteritidis* (Gaertner), etc., 65 ; Wassermann reactions, 30. C.s.f. : Wassermann reactions, 21 ; colloidal gold reactions, 21 ; Noguchi, Ross Jones tests, etc., 42 ; bacteriological examinations, 25. Sputum : examinations for T.B., etc., 20.

L.—FROM THE NEWPORT BOROUGH MENTAL HOSPITAL.

Report of Clinical and Pathological Investigations.—By Dr. M. R. MACKAY, M.C., Medical Superintendent.*Pathological Investigations.*

The following is a summary of the pathological examinations carried out during the year 1932 :—

Urines : routine examinations, 103 ; microscopical, 2. Blood : differential counts, 8 ; total cell counts, 8 ; malarial films, 7 ; Widal reactions, 2 (at County Laboratory) ; Wassermann reactions, 13 (at County Laboratory). C.s.f. : Wassermann reactions, 2 (at County Laboratory) ; estimation of protein globulin cell counts and colloidal gold tests, 3 (at County Laboratory) ; Ross Jones test, 1 ; Nonne Apelt, 1. Bacteriological : examinations of sputum, 3 ; blood, 6. Autopsies, 18 (72 per cent. of total deaths)

Clinical Investigations.

General Paralysis of the Insane.—The malarial treatment of general paralysis of the insane was continued, eleven cases being treated, all being infected by blood inoculation.

Three were discharged, two transferred to other institutions, four remain and two died.

Tryparsamide was given in conjunction with malaria, it was found to be a useful adjuvant in certain cases. The earlier recognition of this disease would help materially in the treatment, and the out-patient clinic is doing something in this respect.

Epilepsy.—During the year, Rutonal (Phenylmethylmalonylurea) has been tried in a number of cases of epilepsy. It was found useful in controlling the fits, though urticarial rashes appeared fairly frequently especially in female cases. It has, however, a depressing effect, and when stopped the fits recur with increased violence.

One case may be of interest, G.D.G., male, age 13 years, was admitted January 22nd, 1932, having from 2 to 18 epileptic seizures daily of the Jacksonian type. An X-ray examination of the skull revealed an opacity deep in the cerebral cortex (? Calcified Haematoma). He was given Rutonal 1½ grs. night and morning, which reduced the fits to about four a month.

Rutonal is useful in the out-patient treatment of epilepsy. A week or two's residence as a voluntary patient being desirable to establish the most suitable dose for each particular patient.

Actino Therapy.—This form of treatment has been commenced during the year, but it is too early for any definite conclusions to be drawn.

LI.—FROM THE NOTTINGHAM CITY MENTAL HOSPITAL.

General Report.—By Dr. G. L. BRUNTON, Medical Superintendent.

A.—*Pathological and Biochemical.**Summary of Examinations.*

Urines: routine, 908; special: urea concentration, 24. Faeces: occult blood, 4. Blood: total counts, 53; differentials, 71; blood films, 108; malarial films, 250; sugar estimations, 6; glucose tolerance curves, 34; urea estimations, 24; non-protein nitrogen, 25; cholesterol content, 82; Van den Bergh reactions, 2; Kahn test, sera for, 3. C.s.f. complete examinations including Nonne Apelt reaction, protein content and colloidal gold reaction, 67; bi-coloured guaiac tests, 30; Kahn tests, 2. Bacteriological, including examinations of faeces, urine and pus, 114; cultures, 108; sugar reactions, 64; throat swabs, 8; sputum examinations, 193. Milk analyses: total estimations, 101. Post-mortem examinations, 43 (83 per cent. of deaths). Histology: pituitary glands cut and stained, 23; brain sections for spirochaetes, 18; other organs cut and stained, 10.

The Bi-Coloured Guaiac Test.—By Dr. Duncan Macmillan, M.R.C.P., E. This test for the cerebro-spinal fluid was introduced by De Thurzo in 1929, and results obtained with it have since been published by Greenfield and Stern. The principles are the same as those which govern the colloidal gold test, but it is simpler, does not require elaborate cleansing preparation of the apparatus, and is consequently not liable to go out of order, if the solutions are properly prepared.

The technique is as follows: 2 solutions are required, one of which (*a*) is stable, while the other (*b*) has to be freshly prepared each time it is used. Solution (*a*) consists of 0.2 per cent. sodium chloride with the addition of 0.5 gram anhydrous sodium carbonate per hundred cubic centimetres. Solution (*b*) is prepared by adding 0.22 c.c. tincture of guaiac to 9 c.c. absolute alcohol (iron-free), and very slowly adding this drop by drop to 40 c.c. distilled water, taking 10 minutes to do so. Two cubic centimetres of $\frac{1}{2}$ per cent. naphthol green (watery solution) are added drop by drop with constant shaking, and then 0.3 c.c. of $\frac{1}{2}$ per cent. fuchsin (alcoholic solution) in the same way. Solution (*b*) should be allowed to stand for 1 hour before use, and should be used before 3 hours have elapsed from time of preparation.

Ten small test tubes are placed in a rack after ordinary cleansing. To tubes I and II 0.5 c.c. of the cerebro-spinal fluid to be tested is added. Then 0.5 c.c. of solution is added to tubes II to X and, after mixing, 0.5 c.c. of fluid is taken from tube II to tube III, similarly 0.5 c.c. from tube III to tube IV and so on, finally rejecting 0.5 c.c. from tube X. To this series of progressively diluted cerebro-spinal fluid, 0.5 c.c. of solution (*b*) is added, the tubes are then shaken well, set aside, and read after twelve hours.

The results are expressed by the figures 0, 1, 2, 3 and 4; 0 = no change, 1 = precipitation with no colour change of the fluid, 2 = precipitation, fluid grey or grey red, 3 = precipitation, fluid grey-green or dull green, and 4 = precipitation, fluid vivid green. Complete precipitation is thus represented by the figure 4, while in the colloidal gold test the figure 5 is the corresponding symbol.

The following table gives the results in a few cases of general paralysis before and after treatment. For purposes of comparison the results of the colloidal test are also shown.

Case.	Treatment.	Bi-coloured Guaiac Test.	Colloidal Gold.
1 H.W. ...	Malaria ...	Before — After 3222100000	5555432100 3222100000
2 J.B. ...	Malaria ...	Before — After 2442221100	5554432120 5432100000
3 H.B. ...	Tryparsamide	Before — After 0220000000	— 1111100000
4 E.M. ...	Malaria ...	Before — After 3444221100	5553251000 5554200000
5 A.C. ...	Malaria ...	Before 1444332100 After 3443221000	5543211000 5555321000
6 T.S. ...	Malaria ...	Before 2344432100 After 3444343210	— 5554311000
7 G.C. ...	Malaria ...	Before 3344422100 After 3444222210	— 5544110000
8 A.S. ¹ ...	Malaria † ...	Before 0444423320 After 0332010000	3321110000 4423110000
9 R.M. ...	Diathermy ...	Before 0342210000 After 2442110000	3322100000 2111000000
10 H.S. ...	Pyrifer ...	Before — After 3444444322	1444210000 5555432111

The type of curve is a paretic one, and corresponds fairly closely to the colloidal gold curve. Also like the colloidal gold reaction it is little altered by treatment, and any alteration that occurs cannot be correlated with the changes in the patient's mental and physical state. The Wassermann reaction was done in every instance, and was uniformly positive except in case 3, where the Wassermann became negative after treatment, and a very weak reaction was obtained with both the bi-coloured guaiac and colloidal gold tests. In all untreated cases where a positive bi-coloured guaiac test was present, the Wassermann test was also positive. In taboparesis there is a superimposed luetic curve, e.g., the reading in one case was 0033344442.

Since its introduction into this laboratory the test has proved entirely reliable, and on no occasion has given dubious results. This is more than can be said about the colloidal gold reaction. It is extremely useful as a check upon the latter, and could replace it. During one period the colloidal gold solution was out of order, and we relied entirely on the bi-coloured guaiac test. Subsequent checking with a reliable gold solution proved the conclusions drawn to be correct, and did not give any additional information.

B.—Clinical.

1. *Prolonged narcosis induced by somnifaine.*—The technique advocated by J. Dozy was adhered to. Two ampoules each containing two cubic centimetres of somnifaine were injected intramuscularly after free purgation, and thereafter the contents of one ampoule were injected as required.

Seventeen cases were treated : three of mania, three of agitated melancholia, one confusional insanity, seven of schizophrenia and three of general paresis. The usual duration of the course was two weeks, but this was extended to three weeks in several cases without any ill-effects. The three maniacal patients showed immediate and continued improvement soon resulting in complete recovery (with subsequent relapse in one case). One of these patients, discharged shortly afterwards, had been in a state of mania for over a year.

The agitated melancholics improved for a time, in one case for several months, but relapse eventually occurred in all three. The schizophrenics included four chronic noisy violent inaccessible cases and three recent ones. Somnifaine was found of great value in resistive inco-operative recent cases, as they became accessible and took food well. In all cases appetite was markedly improved, even where nourishment had previously been refused. Chronic schizophrenics became accessible, and this improvement lasted for months.

The case of confusional insanity was an unfavourable one with schizophrenic features, and no good effects resulted beyond temporary quiescence while actually under the influence of the drug. Similarly the three cases of general paresis showed no resulting improvement, and the drug was only of use as a temporary check to restlessness and excitement.

2. *Artificial Respiration*.—Five schizophrenics were given artificial respiration daily by Sylvester's method, one for two months, one for three months, and the other three for six months. Definite improvement, still present one year after the treatment, occurred in one case, temporary improvement with subsequent relapse in another, while the course of the psychosis was uninfluenced in three cases.

3. *Carbon Dioxide Inhalations*.—Thirteen schizophrenics, two melancholics and two confusional cases were given inhalations of a mixture of carbon dioxide and oxygen, the proportion of carbon dioxide varying from 20 per cent. to 80 per cent. In all the cases a temporary period during which the patient became extroverted and answered questions lucidly and pleasantly ensued. The degree of this lucidity varied, but did not show any correlation with the varying percentage of CO₂. In no case was the permanent recovery described by American authors observed. Repeated applications to the same patient did not produce any beneficial effect other than the temporary lucid interval after each inhalation.

4. *Treatment of General Paralysis by Tryparsamide*.—Four cases of general paralysis, one congenital, were treated by tryparsamide, the number of injections varying from 14 to 20. All showed improvement and three cases showed marked reduction of the Wassermann reaction in the cerebro-spinal fluid, one case becoming negative. There was no corresponding improvement of the colloidal gold curve in any of these cases.

5. *Treatment of Post-Encephalitic Parkinsonism by Ephedrine and Genoscopolamine*.—Three cases of post encephalitic Parkinsonism have undergone treatment by ephedrine and genoscopolamine per os. Some improvement was noted in two of these, one of whom was able to take food more quickly and easily than before. One case, subject to Cataplexy, showed no reduction in the frequency of the attacks although she said she "felt better."

6. *Treatment of Agitated Melancholia by Sulfosin*.—Two cases of agitated melancholia have had courses of sulfosin Leo, but although repeated in one case no improvement has been noted.

7. *Treatment of Melancholia by Insulin*.—Nine cases of melancholia have been treated by injections of insulin, 5 units twice a day. In several of these, increased agitation was sometimes noticed, usually within two hours of injection, but no definite benefit seemed to accrue from this line of treatment although three cases were finally discharged recovered.

8. *Treatment of Stupor by injections of Sterile Milk*.—Three cases of katatonic stupor and one of melancholic stupor have had weekly injections of sterile milk for three months but without apparent benefit.

C.—*Publication.*

"Nembutal in Hospital Practice." By DUNCAN MACMILLAN, B.Sc., M.D., M.R.C.P., E. (*Journal of Mental Science*, Oct., 1932.)

In this investigation the action of the drug by the intravenous route was tested on a series of 50 mental patients, over 70 injections being given. The following conclusions were drawn :—

- (1) Nembutal is a rapidly-acting potent sedative.
- (2) It assists in the investigation and assessment of the mental state of inaccessible and reticent patients.
- (3) It has produced a curative action in early psychotics.
- (4) In melancholia it exerts a prolonged calming action on agitation, and repeated injections have a beneficial effect.
- (5) In cases of emergency, e.g., cut-throat or fracture, the necessity for a general anaesthetic may be obviated by its use.
- (6) For the above reasons, and also on account of its sphere of action as a basal narcotic, it is a useful addition to the therapeutic equipment of a mental hospital.

Since this article was written, a paper, "The Use of Nembutal in Psychiatry," by Drs. Curran and Minski, has appeared in the *Lancet*. An account of the oral administration in fifty-three cases is given.

LII.—FROM THE SUNDERLAND BOROUGH MENTAL HOSPITAL.

Laboratory Report.—Communicated by the Medical Superintendent.

The following is a summary of the examinations carried out in the laboratory during the year :—

Urines, 264. Faeces: bacteriological, 2; occult blood, 2; blood films, 12; sera for Wasserman reaction, 4; Widal's, 2; c.s.f., 13; throat, etc., swabs, 3; sputa, 10; pleural fluids, 2; ascitic fluids, 4; post-mortems, 22 (92 per cent. of deaths).

LIII.—FROM THE WEST HAM BOROUGH MENTAL HOSPITAL.

Laboratory Report.—Communicated by the Medical Superintendent.

The following is a summary of routine laboratory work carried out during the year :—

Urines: routine, 223; sugars estimations, 15; albumin estimations, 16; sputum examinations, 22; blood counts, 5; organs mounted for museum, 6. Blood and c.s.f. examinations: the Wassermann reaction is done as routine on all new admissions, 122; Lange colloidal gold test, 23; colloidal gamboge, 6; post-mortems, 46 (65 per cent. of deaths).

LIV.—FROM THE BARNWOOD HOUSE HOSPITAL, GLOUCESTER.

General Report.—By Dr. J. K. C. LIDDELL, Assistant Medical Officer.

Focal Sepsis.—Ten cases were investigated by Dr. Davey, employing the pathogen-selective technique.

Routine Laboratory Work.—The following is a summary of the examinations carried out during the year :—

Urines: routine, 284; indican, 63; bacteriological, 12. Faeces: bacteriological, 11. Blood: Wassermann reaction, 3; total counts, 3; sugar, 3; calcium, 3. Bacteriological swabs and cultures, 27.

LV.—FROM THE BETHLEM ROYAL HOSPITAL.

General Report.—By Dr. J. G. PORTER-PHILLIPS, F.R.C.P., Physician Superintendent.

A.—*Pathological Department.**Original Work.*

A new apparatus for blood collection (*B.M.J.* January 23rd, 1932.). A new method of fat estimation. Comparative methods of fat estimation in 117 cases with special reference to pancreatic deficiency. Comparison of methods of calcium estimation. Investigation of cerebral oedema in encephalitis. Investigation of agglutination reactions in 59 cases, with reference to a co-existing lymphocytosis. New methods of treatment of encephalitis. In this investigation conclusions derived from a few cases are of little value, and results must be accumulated.

Routine Work.

Urine: routine, 474; special, 48. Faeces: routine, 67; special, 31. Blood: Wassermann reactions, 178; surface tension range, 82; Thannhauser test, 171; urea, 53; counts, 55; special tests, 41. Throat cultures, 90. C.s.f. tests, 60; other examinations, 35. Autopsies, 13 (54 per cent. of deaths). Animal experiments, 4.

B.—*Psychological Department.*

Report of work done by the Research Assistants, Psychology Department, University College, London University.

The early studies made under the direction of Professor C. Spearman, F.R.S., have been continued at Bethlem Royal Hospital, Kent, and at Maudsley Hospital, Denmark Hill, London, and at Horton Hospital, Epsom, Surrey.

We would express, at once, our thanks to the Committees, Superintendents, and (in the case of the Bethlem Hospital) to the Director of Psychological Studies, of the above institutions.

The Research Assistants have applied Spearman Factor mental tests to over 100 patients. The tests are as follows: (1) "G," dynamic (innate) general ability; (2) "V" reproduct verbal ability; (3) "P" general inertia or perseveration; (4) "F," fluency of association; (5) "M," immediate memory; (6) "W," a rating for persistence of motives; (7) "O," fluctuations of attention; (8) "S," speeded mental activity.

The above factors have been shown to be significant in the following ways:—

(a) "G" supplies a measure of intelligence which is free from social and educational influences. It is generally deteriorated in all mental illnesses.

(b) "V" gives an approximate measure of "G" prior to mental illness or deterioration.

(c) "V-G" offers a measurement of mental deterioration.

(d) "F" is highly associated with estimates of "mood."

(e) "P" is associated with schizophrenic condition; it is possible that it measures "will," held by Wiersma to be a prime conditioning factor in schizophrenic illness.

Comparative studies are being made in terms of the above factors. An example of the procedure is given below for the factors "P" and "F," although all the factors can be similarly treated.

Study of Patients in terms of "P" and "F" Measurements.

Only two scores for each factor are considered, namely, *low* and *high*. All scores above 50 per cent. are considered to be *high*; the rest, *low*.

The patients fall, then, into the four following categories :

- I. Patients with low "F" and low "P".
- II. Patients with high "F" and high "P".
- III. Patients with high "F" and low "P".
- IV. Patients with low "F" and high "P".

It is found that manic cases fall into category III.; whilst depressions with apathy (retarded?) fall into category IV. (It is very natural to expect association between high "F" and low "P" (or vice versa)).

The category I. contains hysteria and paranoia cases; and schizophrenic patients of Class "A". The low "F" scores distinguish them from manic patients.

Category II. contains (1) schizophrenic patients of class "B"; (2) depressive patients with excited mood. The former are, of all patients, psychiatrically very ill, and their prognosis is probably poor. The high "F" of the group (2) distinguishes these depressions from those in category IV.

Careful regard of these categories shows agreement with psychiatric classification of the patients. But the important matter follows: it is found that some patients offer anomalies when objective scores and clinical accounts are compared. The objective measurements immediately point to the need for care in the diagnosis and prognosis of these anomalous cases. In this way, particularly, psychological testing should be of assistance to psychiatrists.

"P" and "F" scores, then, show the following significant results: (1) they provide a means for distinguishing between, or helping to distinguish between, manic and hysterical or schizophrenic patients; (2) for distinguishing two groups of schizophrenic illness (or degrees of the illness), the groups being "A," and "B", with low and high "P" respectively; (3) for distinguishing between two groups of depressive patients, one apathetic or retarded, and the others "excited," pointing, it would seem, to agitated depression.

The importance of these findings are not so much that objective measurements provide a means for classifying patients (although this would be important enough if patients in different hospitals were to be compared on an objective basis); their value lies in the anomalies that appear when objective scores and the psychiatrist's clinical records are compared.

The full data for the comparative studies made by the Research Assistants, of which the above is only part, will be shortly published.

Research Assistants: Wm. Stephenson, M.Sc., Ph.D., Ph.D.A.Inst.P., Constance Simmins, M.A., Grace L. Studman.

LVI.—FROM ST. ANDREW'S HOSPITAL, NORTHAMPTON.

General Report.—By Dr. D. F. RAMBAUT, Medical Superintendent.

During the year 1932 the work of the Reception Hospital at Wantage House has been continued in accordance with the principles which have hitherto guided the policy of this research centre. Every effort has been made to investigate the cases thoroughly from the physical standpoint in order to determine the possible existence of a physical factor which might not only have precipitated the onset of the mental disorder, but might also have conduced to the chronicity of many cases. Where this physical factor has been found and traced to a specific focus, as for example, profound intestinal toxæmia, dental caries, or such chronic rhinological conditions as infections of the antra or other accessory nasal sinuses, it

has been possible by instituting suitable treatment to bring about a very definite improvement in the patients' mental state. A large proportion of those patients who received appropriate treatment at Wantage House during 1932 were discharged as "cured." Whether this cure is a complete and permanent one, or whether relapses will occur when the benefits of institutional treatment are withdrawn cannot at present be ascertained, but it is hoped to attempt a "follow up" of these patients, and thereby to be able to assess accurately the ultimate value of the treatment. During the year 38 patients were discharged from Wantage House, 21 ladies and 17 gentlemen, of whom 11 ladies and 12 gentlemen were recovered, a percentage of 52.38 and 70.6 respectively. Admissions to Wantage House were well maintained, 47 patients, 29 ladies and 18 gentlemen having been admitted during the year. It has been found greatly to the advantage of the patients to extend their length of residence at the Reception Hospital once it has been decided that their physical condition necessitates treatment. Consequently the actual number of patients admitted during 1932 was rather lower than in previous years, but the results of treatment amply justified the lower rate of admission.

During the year a change in personnel on the staff led to the splitting of the appointment of medical officer to Wantage House and pathologist to the Hospital into two separate appointments, the one clinical, the other, pathological. It is hoped that by the appointment of a full-time pathologist it will not only be possible to carry out more exhaustive pathological investigations for the patients at the main hospital, but that with the facilities afforded by the laboratories, certain experimental work which has a direct bearing on the causation of some forms of mental disorder may be undertaken. At the same time the essential co-relation of the work of the clinician with that of the pathologist is being maintained by frequent consultations between the medical officers and the pathologist.

A.—*The X-Ray Department.*—By Dr. D. J. O'CONNELL and Mr. E. TRANMER.

During the past year 157 patients were examined, for whom 289 radiograms were taken.

A routine stereoscopic examination of the nasal sinuses was made in every case in which the condition of the patient would allow of this, actually in 42 cases. In only one of these, was any latent disease of a sinus detected. In this case a slight infection of the posterior ethmoidal cells was evident, but operative interference was not warranted.

Fifty-six patients had a complete series of dental radiograms taken. This examination was of great value in enabling dental treatment to be given at an early stage in dental caries.

B.—*The Electrical Department.*—By Dr. D. J. O'CONNELL.

1. *Artificial Sunlight.*—Seven patients received artificial sunlight treatment from the Mercury Vapour Lamp. On an average six irradiations were given to each patient.

2. *Diathermy.*—Fourteen patients were given this treatment, of whom nine had the treatment applied locally to the pelvis, for the relief of chronic inflammatory pelvic conditions. It was found that chronic endocervicitis responded well to this method of treatment, which was adopted in the case of five ladies.

Four gentlemen in whom examination revealed hypertrophy of the prostate were much benefited by a course of pelvic diathermy.

3. *Radiant Heat.*—Three patients with joint affections improved as a result of treatment by radiant heat. Each of these patients had a course of ten treatments.

C.—*The Laboratories.*—By Dr. RUBY O. STERN and Mr. C. WEBB.

The total number of examinations carried out during the year was 1,488.

1. *Analysis of Routine Pathological Investigations :*

(a) *Biochemical :*

Blood : estimation of non-protein nitrogen, 32 ; of serum calcium, 82 ; of phosphates, 72 ; of CO (Van Slyke), 66 ; of sugar, 8 ; Van de Bergh reaction, 76. Blood counts : complete counts, comprising estimation of red and white cells, differential leucocyte count, and estimation of haemoglobin by Miescher's colorimetric method, 101. Leucocyte count and differential count only, 142. Glucose tolerance tests, 29 ; fractional test meal : (a) on standard oatmeal gruel, 30 ; (b) by histamine method, 1. Cerebro-spinal fluid : cytological and chemical examination, 12. Urine : twenty-four hour measured specimens examined qualitatively and quantitatively, 468 ; single specimens for one complete examination only, 68. Stools : chemical examination for soluble mucus, stercobilin, occult blood, starch, protein and fat digestion, 84. Serological reactions : during 1932, as in former years, the sera and cerebro-spinal fluids on which a complement fixation test was required have been sent to the Public Health Laboratory for examination, but at the end of the year the Kahn reaction was introduced into the Wantage House Laboratory, and henceforward it is proposed to adopt this reaction instead of the Wassermann reaction, owing to the simplicity of the technique and the facility with which a small number of sera or fluids can be examined. Number of Wassermann reactions, sera, 20 ; cerebro-spinal fluids, 8.

(b) *Bacteriological.*—The total number of bacteriological examinations carried out was 197, as follows :

Cultures : from faeces, 105 ; cerebro-spinal fluids, 6 ; urines, 19 ; throat swabs, 4 ; resting juice, 30 ; pus, 2 ; ethmoidal sinus washings, 1 ; cervix, 8 ; uterus, 2 ; gums, 1 ; ovarian tissue, 1 ; gall bladder, 1. Autogenous vaccine preparations were 25, as follows : intestinal, 20 ; urine, 2 ; resting juice, 1 ; dental, 1 ; sputum, 1 ; examinations for malarial parasites in blood films, 2.

(c) *Histological.*—Post-mortem examinations were made on 14 patients during the year. Number of paraffin sections prepared from necropsy and operation material, 9. The detailed examination of the nervous system of a case of pre-senile dementia involved the preparation of a very large number of sections, some of which were cut by the frozen method, the others being embedded in celloidin. (For a detailed report of this case, see page 107.) The histological appearances associated with recent haemorrhage were studied in the case of a patient who had died about a fortnight after an apoplectic attack. At the post-mortem it was found that a cerebral haemorrhage had occurred from rupture of a branch of the left calcarine artery, a somewhat uncommon site for a haemorrhage. Extensive destruction of the left occipital lobe had followed the haemorrhage. The lateral wall of the posterior horn of the left lateral ventricle had been destroyed and much blood clot was present in this part of the ventricle. The chief interest of the case histologically lay in the enormous proliferation of fibrous neuroglia at the line of demarcation between normal brain tissue and the haemorrhagic areas. This proliferation offered a striking demonstration of the rapidity with which astrocytes can proliferate in response to an irritating stimulus ; in this instance the causative irritant in the shape of the haemorrhage had been in operation only a fortnight. The blood vessels in the brain and in the circle of Willis had undergone degenerative changes. Many calcareous plaques were seen on the basilar and posterior cerebral arteries. Histologically, many small vessels in the cerebral cortex particularly showed endarteritis deformans and hyaline degeneration of the media. The condition of the heart and aorta in this case was that expected from the occurrence of cerebral haemorrhage, namely, enlargement and hypertrophy of the left ventricle, with atheroma and dilatation of the aorta.

D.—*Report on a case of Pre-Senile Dementia (Pseudo-Alzheimer's Disease), with atypical Histological Features.*—By Dr. D. J. O'CONNELL and Dr. RUBY O. STERN.

This case is reported in view of the difficulty experienced in exact diagnosis both clinically and pathologically. Although it is obvious that the mere attachment of a label to a clinical or pathological condition does not constitute a disease entity, and that there are all gradations between the classical arteriopathic senile dementia on the one hand and the typical case described by Alzheimer and named after him on the other, yet it may be of interest to differentiate a particular case which seems to conform to no well recognized group, and to describe it, in the hope that other observers may thereby be stimulated to differentiate similar cases should they encounter them.

No attempt is made in this short summary to present in detail all the histological features of the case, or to review in its entirety the literature on the pathology of the pre-senile dementias. This we hope to do in a subsequent publication. All we wish to accomplish in this report is to point out the features of the case which marked it off from the generally recognized groups of the pre-senile dementias and led us to identify it with two similar cases reported in Germany.

Clinical History.—Mr. D., age 45 years, was admitted to St. Andrew's Hospital on September 11th, 1930, as a certified patient. Symptoms of mental trouble dated from three years previously. These were of such a nature that they permitted him to follow his vocation as a minister of religion, though in a reduced capacity, up to a few months before admission. His history stated that at the beginning of his illness he had experienced difficulty in writing his sermons; later he experienced difficulty in delivering them. Irritability and emotional instability then became evident and his wife particularly noticed his inability to express himself clearly. His condition was such that in September, 1930, it became necessary to certify him.

There was no history of any previous mental trouble and the family history also proved negative in this respect. The patient had been gassed in the war and subsequently had suffered from a mild degree of shell-shock. He had been married for eleven years without issue.

On admission his general physical condition was good, but any detailed physical examination was out of the question owing to the patient's active resistance. He appeared confused and restless. Mentally, the great reduction in intelligence was apparent rather than real owing to an almost complete aphasia. Motor speech was reduced to a few stereotyped phrases, such as "Yes," "No," "One-fifty," which were repeated indiscriminately, whilst on the sensory side he did not appear to understand anything that was said to him. The visual speech centre seemed much less affected, for at this time he was able to read a newspaper and to show the other patients items which had interested him. He settled down well to the hospital routine and was always first at meals, for walks, and for bed. He displayed an acquisitiveness for chocolates and cigarettes with no regard to the laws of ownership and accompanied by no sense of guilt. At no time during his illness were any fits, twitchings, hallucinations or delusions reported or observed. The cerebro-spinal fluid was examined on two occasions and on each occasion was completely normal. The Wassermann reaction in the fluid and in the blood was negative.

Speech failed rapidly during 1931, and by June aphasia was practically complete. At this time it was noticed that his few remaining words were uttered in a husky voice, and that though the external movements of articulation were made, few sounds were produced. Physical deterioration also became evident about this time when he began to walk like a feeble elderly man and developed a rather brassy type of cough.

By September, 1931, grunts only were emitted, and these only at infrequent intervals. Perception was now greatly reduced, and the patient entered upon an automatic existence of the lowest grade. More obvious physical signs began to manifest themselves. There was weakness of the muscles of mastication and some difficulty in swallowing. A definite ataxia was also noticed. In October aphasia was complete and the patient's condition being no longer one of active resistance, it was possible to carry out a physical examination. There was widening of the palpebral fissures, loss of tone of the sphincter oris, and some weakness of the right side of the face. The tongue was wasted and showed a rippling tremor on its surface. Swallowing was so impaired that only liquid foods could be taken. Both knee and ankle jerks were very brisk, but brisker on the right than on the left side. Ankle clonus could be elicited on the right side, but not on the left. The right plantar response was extensor, the left indefinite. There were no signs of any cardio-vascular disease. During December, 1931, the bulbar paralysis advanced rapidly. Swallowing became very difficult and there was obvious wasting of the muscles of mastication and of those of the neck. Weight was now lost very quickly. At the end of December the patient ran a temperature and developed a crowing cough. He succumbed to an attack of broncho-pneumonia on January 4th, 1932.

Summary of Clinical History.—A man aged 46 at time of death, with no family history of mental disorder, had suffered from progressive aphasia accompanied by mental deterioration for 4½ years. Perception and general intelligence remained relatively good until late in the course of the disease. Bulbar palsy with symptoms of pyramidal tract degeneration developed six months before death, after which physical and mental deterioration was rapid. No fits occurred at any time and no delusions or hallucinations were reported. There was no evidence of generalized or cerebral arterial disease. The immediate cause of death was broncho-pneumonia.

An autopsy was performed 60 hours after death by one of us (D.J.O'C.). The skull was thin and easily sawn. There was a large excess of cerebro-spinal fluid in the sub-arachnoid space and in the ventricles. The brain, which weighed 48 ounces, was generally shrunken, though atrophy was particularly noticeable in the fronto-parietal regions. Here the gyri were widely separated, but more anteriorly they appeared ill-defined. No other abnormalities were evident to the naked eye. The spinal cord seemed normal on removal. The immediate cause of death was a basal broncho-pneumonia. There were recent adhesions at the base of the right lung, with some pus on the diaphragmatic aspect of the pleura. The lower lobes of both lungs were consolidated and portions therefrom sank in water. Pus could be squeezed out of the bronchioles. The heart appeared normal. Post-mortem changes had occurred in the liver and supra renals, the other viscera were healthy on naked-eye examination.

The brain and spinal cord were fixed in 10 per cent. formalin. After this fixation the brain was re-fixed in formol-saline, which at the time the post-mortem was performed had not yet been adopted as the routine fixative for nervous tissues.

Sections were made from the following areas of the brain: right and left frontal poles; right and left motor areas; right and left occipital poles; both basal ganglia; the midbrain, pons and medulla. The cervical, dorsal and lumbar regions of the spinal cord were sectioned at various levels.

The ordinary routine methods for the staining of the nervous system were employed, namely: on frozen sections, Scharlach R. with a haematoxylin counterstain; Da Fano's modification of Bielschowsky's method for neurofibrils and senile plaques; Cone and Penfield's modification of Hortega's method for microglia; Marinesco's method for fibrillary changes and senile plaques; and Anderson's Victoria blue method for neuroglia; on

celloidin sections, iron haematoxylin with Van Gieson's counterstain; Nissl's method for nerve cells, Mallory's phosphotungstic acid method for neuroglia; and the Kultschitsky-Pal method for myelin.

The salient features of the case histologically were the loss of nerve cells in the cerebral cortex and in certain of the cranial nerve nuclei; (the German expression "Ausfall," literally, a "falling out" best describes the condition); a compensatory neuroglial overgrowth in the cortex; and degeneration of the pyramidal tracts which was more advanced on one side than on the other.

Loss of nerve cells was most evident in the third layer of the cortex, in the frontal and pre-frontal regions. The pyramidal cells of this layer were few in number, but those present appeared healthy, except for some shrinkage of their cytoplasm, with the deposition therein of an excess of lipochrome pigment, which, it is claimed, is an index of loss of functional activity. It is difficult, and would also be unwise, to express a positive opinion on the condition causing the shrinkage of these nerve cells. There could be no doubt that the "outfall" of cells was due to a pathological process, but the shrinkage of the cells, leaving, as it did, the nuclei unaffected, might well have been an artefact caused by imperfect primary fixation. At all events, the shrinkage was not that associated with the condition of peripheral chromatolysis, since the dendrites were well defined and the Nissl granules were obvious throughout the cells and their processes; it resembled more closely the early stages of Nissl's chronic cell degeneration.

The Betz cells were greatly diminished in number, but apart from the enormous lipochrome deposits which in some cells displaced the nucleus to one side, they appeared normal. The neurofibrils coursed round the periphery of the cells, but the Da Fano method demonstrated their normal structure. Neither that method, the Cone-Penfield modification of Hortega's method, nor Marinesco's method revealed a single senile plaque in any of the several blocks of tissues sectioned from the cerebral cortex of both hemispheres. These negative findings unexpectedly refuted the clinical diagnosis of Alzheimer's disease, since these plaques form, with degenerative changes in the neurofibrils which were also absent in this case, the pathological basis of that disease. There was proliferation of neuroglia in most regions of the cortex, and we could not distinguish any difference between the two cerebral hemispheres in this respect. The neuroglial proliferation was especially evident in the deeper layers of the cortex. The small blood vessels in the cortex of both hemispheres seemed more numerous than normal, but arteriosclerotic, or other degenerative changes were non-existent.

In the medulla there was a definite reduction in the number of the cells of the hypoglossal nucleus on one side, and one or two of those remaining were chromatolytic. The cells of the tenth and eleventh nuclei on the same side also appeared to be slightly fewer in number than those of the other side, but the disproportion was not so obvious as that between the cells of the twelfth nucleus on the two sides. Of the cells in the spinal cord we can, unfortunately, say very little, as the spinal cord was, by a mischance, fixed without previous incision of the dura mater. Consequently, gross distortion of the cord, and especially of the nerve cells occurred. As far as we were able to judge, the numbers of anterior horn cells at all levels of the cord were normal.

The radial fibres in the cortex were paler than normal in sections stained by the Kultschitsky-Pal method; otherwise, the myelinated fibres appeared normal in sections from both hemispheres. In the basal ganglia, the nerve fibres in the genu of the internal capsule had undergone either partial or complete degeneration. Some fibres also in the posterior limb of the capsule were demyelinated. This degeneration of the pyramidal tract fibres was traced downwards by both the Kultschitsky-Pal and the Schiellach R. methods, through the crura in the mid-brain, into the pons,

medulla and spinal cord. It was not surprising, in view of the much earlier physical signs observed on one side of the body clinically, to find that the pyramidal lesions were more extensive and advanced on one side of the brain than on the other. This disparity obtained throughout the cerebro-spinal axis, as far down as the lumbar segments of the cord. It was, perhaps, noteworthy that in the spinal cord only the crossed pyramidal tracts were affected; the indirect had escaped the disease process. The pyramidal lesions appeared to be of a descending type, as the amount of degeneration became progressively less as it was traced downwards from the basal ganglia, though little difference in the number of degenerated fibres as shown by the Scharlach R. method was noticed down to the level of the cervical cord, where there were obviously fewer degenerated fibres than in the medulla. This observation, in so far as it demonstrated the more advanced degeneration of the cortico-medullary fibres as compared to the cortico-spinal, confirmed the clinical findings.

Discussion.—Clinically this case conformed fairly closely to that form of pre-senile dementia known as Alzheimer's disease, in which early speech disturbances are common and in which signs of amyotrophic lateral sclerosis and bulbar palsy may occur. The only negative features which might have led us to doubt the diagnosis were the complete absence of fits and of hallucinations or delusions, which usually complicate the picture of Alzheimer's disease. But the whole clinical picture seemed to us otherwise characteristic. The diagnosis of Pick's disease was considered, but was rejected on account of the non-familial character of the condition in our case, whereas Pick's disease is always familial; further, at the post-mortem the atrophy of the brain was generalized, not localized, as in Pick's disease. An early arteriopathic dementia did not suggest itself in the absence of clinical evidence of cardio-vascular disease, whilst the diagnosis of some form of cerebral syphilis was excluded by two examinations of the cerebro-spinal fluid.

At post-mortem the generalized atrophy of the brain appeared to confirm our diagnosis; the histological examination confuted it. The complete absence of Alzheimer's plaques and of the fibrillary changes in the neurofibrils of the cortical nerve cells known as Alzheimer's tangles, made the diagnosis of Alzheimer's disease untenable. The problem then faced us of discovering to which category of pre-senile dementias our case belonged. Finally we were able to trace two similar cases.

The first was a case of Spielmeyer's (quoted by Runge in Bumke's "Handbuch der Geisteskrankheiten"). The onset was later than in our case. In Spielmeyer's, the mental disorder first showed itself at the age of 60 years with the bulbar type of speech disorder and poverty of vocabulary. There was a tendency to persist in a question and stereotyped, monotonous phrases. Spastic weakness and exaggerated reflexes appeared. At the end of 3-4 years the deepest dementia resulted. Histologically there was gross disintegration of the cortical cells leading to sclerosis and a considerable poverty of the cortical myelin; a certain nuclear "outfall" in the medulla and spinal cord with shrinkage of the nerve cells. There were no senile changes and no arterio-sclerotic vascular lesions.

The second case which we were able to trace was one reported by Scholz. His patient, a man 48 years of age, showed a rapid diminution in all intellectual faculties. His speech became stereotyped with marked perseveration of single words and formation of senseless new words. There were no outstanding neurological symptoms; neither was there any clinical evidence of arterio-sclerosis. The patient died after 3½ years from a lung abscess. Histologically there was a diffuse parenchymatous degeneration of the cerebral cortex, particularly in the hind brain, with much "outfalling" of ganglion cells. Here and there certain areas showed Nissl's chronic cell change, and in these areas there was a neuroglial reaction with many amoeboid glial cells. The degenerative process involved the second to the fourth cortical layers. No diffuse vascular lesions were found, but in small areas in the central gyrus there was an increase in the number of new vessels associated with a neuroglial reaction.

The similarity between these cases and our own is self-evident. We were unable to find a description of such cases in the English or American literature. The only feature which appears peculiar to our case is the extensive pyramidal tract degeneration. The relationship of this to the cell changes seems to us to be of interest. We could find no record of cases in which mental symptoms have accompanied, or preceded, amyotrophic lateral sclerosis.

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E.—*The Blood Picture in Various Types of Mental Disorder*.—By Dr. D. J. O'CONNELL and Dr. RUBY O. STERN.

The opportunity presented itself during the latter part of 1932 of analyzing the blood counts which had been made in the laboratory of Wantage House during the past five years, and it appeared to us worth while to attempt to ascertain whether any constant blood picture could be co-related with any particular type of mental disorder. It must be emphasized that the great majority of these blood counts were not made by us, but by Dr. Ford Robertson, pathologist to St. Andrew's Hospital, from the time Wantage House was opened in 1927, to September 1932, and that it was due to his work that we were able to secure such a large number of counts for analysis.

The blood count in mental disorders has recently been discussed by Northcote (1), who in a series of 30 cases of various types was unable to satisfy herself that constant abnormalities existed in any one type. She found a slight anaemia in 53.0 per cent. of all her cases, but most marked in the manic-depressive group (five out of seven cases). Leucocytosis, both relative and absolute, was much more common than leucopenia, 43.0 per cent. of all cases having either a relative or absolute leucocytosis. Ten cases showed a relative polymorphonuclear leucocytosis as compared with one case having a relative lymphocytosis. Northcote stressed one interesting fact, namely, that of the six cases in which there was a leucopenia, five were of schizophrenia.

To compare the results of one observer with those of another is always difficult where numerical calculations are involved. This difficulty is enhanced in the case of blood counts because different observers regard different figures as representing the normal. We have taken those given by Piney (2), which correspond fairly closely with those used by Northcote, but for critical purposes we have allowed a slightly wider deviation from the "normal" than is generally accepted. The following figures constituted our "normals".

Red blood corpuscles : 5-5½ million per c.mm. for males ; 4½-5 million per c.mm. for females.

White blood corpuscles : 5,000-10,000 per c.mm. Polymorphonuclears 60 per cent.-75 per cent. (Piney gives an average of 67 per cent.)
 Lymphocytes 20 per cent.-35 per cent. (Piney gives an average of 25 per cent.)

The total number of counts we analyzed was 461. All of these had had a red and total white cell count ; 456 had had a differential leucocyte count. In this series it was possible to separate the cases into five groups corresponding to the clinical diagnoses of melancholia, manic-depressive insanity, paraphrenia, confusional insanity and dementia praecox. We decided to limit the grouping to these five well-defined clinical entities in order to secure groups containing a sufficiently large number of cases to be of some value for the purposes of our study. The other mental states which are represented, but not grouped, are paranoia, arteriopathic dementia, alcoholic and epileptic insanity, mania, puerperal insanity, adolescent insanity, the psychoneuroses, and insanity associated with

organic disease of the nervous system, e.g., general paralysis and sub-acute combined degeneration of the cord. Some of the counts were from the same patients, but made at different times, usually on admittance and on discharge from the Hospital. Where we found that more than two counts had been done on the same patient we recorded the first and the last. In this way we hoped to approximate to an average on the various counts.

The red cell count varied much more widely than did the total white cell count. Taking all the cases together, 29.0 per cent. showed some anaemia. In the different groups the highest degree of anaemia was found in the paraphrenic group in which the red cell count was below normal in 40 per cent. of cases. In melancholia, 34.5 per cent. showed evidence of anaemia; in confusional insanity and dementia praecox, 28.5 per cent., and in the manic-depressive psychosis, only 22.2 per cent. The comparatively low percentage of anaemic patients in this last group is interesting in view of Northcote's finding that in her cases anaemia was most marked in this group. We are inclined to agree with Northcote that anaemia in mental disorder is purely a question of the general health. We would explain the much lower incidence of anaemia in our cases as compared with Northcote's by the fact that our patients belonged generally to a better nurtured class and therefore the standard of their general health was higher.

The white cell count revealed one or two features of interest. In the main, the total white cell counts fell within normal limits, 69.4 per cent. of all the counts having the normal figures of from 5,000-10,000 leucocytes per c.mm. A definite leucocytosis was found in 18.4 per cent. but a leucopenia in 12.2 per cent. of all the counts, so that a leucocytosis did not appear to be so very much more common than a leucopenia. Taking the separate groups, two facts emerged; one, that of all the groups the manic-depressive showed the least variation from the normal (82.0 per cent. normal count, 10.0 per cent. leucocytosis, 8.0 per cent. leucopenia); the other, that in confusional insanity leucopenia is relatively common (26.3 per cent. of the counts), whilst leucocytosis is rare in this form of mental disorder (10.5 per cent. only having a white cell count of over 10,000 per c.mm.) It is necessary to point out that these cases were labelled "confusional insanity," because at the time the blood count was done a confusional attack was the outstanding feature of their mental disorder. They were not necessarily cases of acute confusional insanity, though some of them may have fallen into this category. We emphasize this point because it may explain the high incidence of leucopenia. In acute confusional states, which are usually of toxic origin, a leucocytosis might be expected.

The findings in the various groups are summarized in Table I:—

TABLE I.
THE LEUCOCYTE COUNT IN MENTAL DISORDERS.

	Leucopenia. (under 5,000 per c.mm.)	Normal. (5,000-10,000 per c.mm.)	Leucocytosis. (above 10,000 per c.mm.)
	per cent.	per cent.	per cent.
Total No. of counts (461)	12.2	69.4	18.4
Melancholia (100)	12.0	70.0	18.0
Manic-Depressive Insanity (50) ...	8.0	82.0	10.0
Paraphrenia (50)	16.0	66.0	18.0
Confusional Insanity (19)	26.3	63.2	10.5
Dementia Praecox (100)	15.0	71.0	14.0

The differential leucocyte count was of interest in that the proportion of cases showing a relative lymphocytosis was high and very high in certain groups. Taking the total number of counts, 54.0 per cent., or just over half the cases, had a normal differential count, whilst 33.5 per cent. showed a relative lymphocytosis and only 12.5 per cent. a relative polymorphonuclear leucocytosis. As in the total leucocyte count, so in the differential count the manic-depressive group showed the least departure from the normal. In this group 72 per cent. of the counts fell within normal limits; 20 per cent. showed a relative lymphocytosis and only 8 per cent. a relative polymorphonuclear leucocytosis. Again also, the group classed as confusional insanity gave the most abnormal figures: only 42.9 per cent. of counts were within normal limits; 47.6 per cent. showed a relative lymphocytosis and only 9.5 per cent. a relative polymorphonuclear leucocytosis. The figures for the dementia praecox group were also rather striking, only 51.6 per cent. being within normal limits, whilst 41.0 per cent. showed a relative lymphocytosis and only 7.4 per cent. a relative polymorphonuclear leucocytosis. The findings in these, and in the other groups, are given in Table II:—

TABLE II.
THE DIFFERENTIAL LEUCOCYTE COUNT IN MENTAL DISORDERS.

	Relative Lymphocytosis (Polymorphs under 60 per cent.)	Normal (Polymorphs 60-75 per cent.)	Polymorphonu- clear Leucocytosis. (Polymorphs over 75 per cent.)
	per cent.	per cent.	per cent.
Total No. of counts (456) ...	33.5	54.0	12.5
Melancholia (105)	35.2	54.3	10.5
Manic Depressive Insanity (50) ...	20.0	72.0	8.0
Paraphrenia (50)	30.0	64.0	6.0
Confusional Insanity (21) ...	47.6	42.9	9.5
Dementia Praecox (95)	41.0	51.6	7.4

Our results have shown that in cases of mental disorder there is in about a quarter of the cases some degree of anaemia, but that this anaemia is co-incident and has no relationship to the mental state, it is an index of the general health of the individual. The total leucocyte count was within normal limits in by far the greater proportion of our cases. Leucocytosis was certainly more common than leucopenia, but whereas in a large number of cases in which the total white cell count was above 10,000 per c.mm. there was an obvious cause for a leucocytosis, as for example, induced malaria, abscesses, common colds, feverish attacks of unknown origin, we could not determine any obvious cause for the leucopenia.

The differential leucocyte count was mainly remarkable for the high incidence of a relative lymphocytosis. Of the total number of counts, a third showed a differential count with the polymorphonuclears below 60 per cent.

Whereas no particular group presented striking abnormalities in the blood count, it may be worth while drawing attention to the fact that in attacks of confusional insanity, whatever the primary form of mental illness may have been, over a quarter of the cases showed a definite

leucopenia and nearly half of them a relative lymphocytosis. One other point we wish to emphasize is that in melancholia, in which the toxic factor is supposed to be especially operative, the total leucocyte count was normal in 70.0 per cent. against a normal figure for the total number of counts of 69.4 per cent., whilst the figures for the differential count in melancholia showed a relative lymphocytosis of 35.2 per cent. as against the figure of 41.0 per cent. for dementia praecox, in which no such factor is evoked to account for the condition.

Our results have confirmed our impression that performance of a blood count is one of the least important examinations in the laboratory investigation of mental disorders.

It is a pleasure to thank Mr. C. Webb for his help in compiling the statistics of blood counts from the laboratory records.

References.

M. L. NORTHCOTE.—*Journ. Mental Sc.* 1932. LXX. 264.

A. PINEY.—*Diseases of the Blood.* London. J. and A. Churchill. 1932.

F.—*The Intestinal Flora in Physical and Mental Disease.*—By Dr. RUBY O. STERN.

In view of Dr. Ford Robertson's interesting work on the anaerobic flora of the intestinal tract in mental disorders, carried on at this Hospital during a period of five years, it was thought that an apposite comparison might be made between such flora and the anaerobic intestinal flora in purely somatic disease by an observer who had hitherto had no experience in the particular cultural methods which Dr. Ford Robertson employed. Through the courtesy of Dr. A. B. Rosher, Director of the Pathological Institute of Charing Cross Hospital Medical School, and Dr. J. Patterson, Biochemist to that Institute, the necessary specimens have been obtained from those sent to their laboratories for chemical examination.

The investigation, which was begun during the latter months of 1932, is still in progress, and it is as yet too soon for any definite conclusions to be drawn from the results obtained. It is proposed to culture anaerobically at least one hundred specimens, fifty from the present source of supply, and another fifty from a hospital near by in order to secure the optimum conditions for culture. These will not have been obtained for the first fifty specimens, which were at least forty-eight hours old because of the necessary transit through the post.

The assistance of Mr. C. Webb, Head Technician, has been of inestimable value in this investigation, and many thanks are due to him for his painstaking work.

G.—Dental Department.

Report by Mr. GAINSFORD REED, L.D.S., Visiting Dental Surgeon.

The number of visits made to the hospital during the year was 54.

One hundred and thirty-five patients (68 male and 67 female) attended for dental examination and treatment. The total attendances made by them were 870.

Eighty-five reports on cases were sent in.

Forty-four patients (22 male and 22 female) who had not attended previously, or for some years, came up for treatment. In 22 of these "new" cases (15 male and 7 female) dental sepsis of a long-standing nature was found.

The dental treatment carried out has been, in the first place, one of elimination of oral sepsis, in view of the research work into the question of chronic infection in the subject of psychosis.

Secondly, the prevention of caries, and, thirdly, the provision of dentures, in those cases where it is possible, to give sufficient masticating power.

In 70 per cent. of those cases where multiple extractions have been done it has proved possible to provide dentures.

Containers have been provided for the dentures when not in use.

Conservative treatment was found possible, where indicated, in all but one case.

I have had no great difficulty in dealing with these patients, and have found that the mentally afflicted appreciate efforts for their relief from the dental point of view.

In each case every possible focus of dental sepsis has been carefully looked for, and definite apical foci of infection have been found in 45 per cent. of the "new" cases.

Radiographs have been taken for eleven patients and have proved a valuable help in the diagnosis of focal infection, as the removal of such infection is the more important in view of the contention that many acute and sub-acute psychoses seem to be related to some focus of infection.

Impacted wisdom teeth have been found to be a definite source of infection. Three cases have been treated, and in one of them the second molar had to be removed to allow the wisdom tooth to erupt.

It has been particularly noticeable in the mouths of those patients termed chronic cases, who have received treatment during previous years and have come up this year for examination, that, although they take no interest in personal appearance and general cleanliness, their mouths are much more healthy and free from sepsis. In such cases the benefit of dental treatment is outstanding from the point of view of general health.

Nineteen patients had extensive extractions and dentures supplied and it can be claimed that some improvement in their general health has followed.

Marked decalcification of the enamel of the teeth has been observed in mental patients. One patient, a man aged 32, was examined in March, 1932. Gingivitis was present with recession of the gums; the enamel of a number of the teeth showed signs of erosion, but clinically, the teeth were of a strong type. Owing to the mental condition of the patient dental treatment had to be postponed, and, on re-examination at the beginning of November, it was found that extensive decalcification of the enamel and dentine had taken place, inasmuch as the whole crown had become involved to the extent, in the incisor region, of only a portion of the tooth remaining above the gingival margin, resulting in exposure of the pulp. It was necessary practically to make a complete clearance of the upper and lower teeth.

The conclusion is drawn that in such cases of mental disorder, the regulation of calcium metabolism is becoming more necessary to counteract the failure of the bodily defences.

The following is a summary of the work completed throughout the year:—

No. of general anaesthetic cases for teeth extractions, 20; no of patients who received N_2O and local anaesthetics for teeth extractions, 29; extractions, 328; fillings, 88; attendances by patients for scaling, gum treatment, cauterizing and syringing, 188; dressings, 16; new dentures inserted, 38; dentures repaired or re-modelled, 73.

LVII.—FROM THE WONFORD HOUSE HOSPITAL, EXETER.

General Report.—By Dr. H. W. EDDISON D.P.M., Medical Superintendent.

A.—*Routine Laboratory Work.*

The following investigations were carried out during the year :—

Urine : routine, 526 ; special, including bacteriological, urea concentration tests, sugar estimations, albumen estimations and spectroscopic examinations, 54 ; blood : total and differential counts, 20 ; malarial films, 8 ; sugar estimations, 6 ; sugar tolerance curves, 4 ; urea estimations, 20 ; Sachs Georgi serum reactions, 19 ; Wassermann reactions, 7 ; serum agglutinations tests, 23 ; c.s.f. : complete examinations, i.e., cell count, protein content, colloidal gold curve, Wassermann test, 3 ; bacteriological swabs and cultures, 8.

B.—*A Case of Abortus Fever.*

O.H., female. Age 25 years. A member of the hospital staff. Previous illness : she had influenza each year for the past 5 years. No history of any other illness. On February 25th, 1932, she complained of headache and malaise. Temperature 100° F. No signs of organic disease present. The fever was continuous in character with an evening rise between 100° F. and 101° F. Dilutions of the patient's serum 1/25, 1/50, 1/250 were treated with standard emulsions of *B. typhosus* (H. and O.), *B. paratyphosus* A.B.C. and *B. abortus*. The typhoid and paratyphoid group gave a negative result ; agglutination occurred with *B. abortus* to a dilution of 1 in 250.

One week after the onset of the illness the right tonsil and uvula became covered with small, discrete, red papules—no enlargement of neighbouring glands. Four days later a papular eruption, similar in appearance to that on the throat appeared on the face and chest. This eruption disappeared in forty-eight hours, but the eruption on the throat persisted.

Three weeks after the onset the patient's serum in dilutions from 1/25 to 1/2,500 was treated with standard emulsions of *B. abortus* and *B. melitensis*. No agglutination occurred with *B. melitensis* ; agglutination was positive with *B. abortus* to a dilution of 1/2,250. A culture of the patient's blood was sterile and the W.B.C.s were 7,000 per c.mm.

The fever lasted for four months when the patient made a complete recovery. Various forms of treatment, including intravenous injections of N.A.B. and ultra violet light, were tried without influencing the course of the disease.

C.—*Recurrent Uraemia with Hydronephrosis.*

Patient—A.M.P., admitted May 31st, 1932. Age 53. Previous illness : had suffered from migraine since childhood. She had an attack of "confusion" in 1930 and a similar attack in 1931.

On admission she showed symptoms of acute confusion. She was excited, disorientated for time and place, incoherent, and resistive to attention.

She was well nourished and an examination of the bodily systems did not reveal any organic disease. Laboratory investigations gave the following results :—Blood : urea 90 mg. per cent ; creatinine 0.83 per cent. Wassermann negative. Urine : no sugar, no albumen, urea concentration test 3 per cent.

The mental symptoms disappeared twenty-four hours after admission and she became rational in speech and behaviour. She showed, however, a complete amnesia for the period during which the acute symptoms were present. An examination of the c.s.f. showed urea 32 mg. per cent.,

glucose 32 mg. per cent. Wassermann negative, no cells, Nonne Apelt negative, phosphates 1.8 mg. per cent. The blood urea was again estimated and found to be normal, 45 mg. per cent. The urea concentration test was found to be within normal limits.

The chemical finding of uraemia of such short duration associated with a urea concentration power of 3 per cent. and albumen free urine suggested a recurrent temporary obstruction of the urinary passages. The following report refers to a cystoscopic and pyelographic examination made on June 2nd.

Examination of catheter specimen of urine. Sp. Gr. 1,002; albumen nil; centrifugal deposit—no casts nor cells; cultures sterile.

A catheterising cystoscope was introduced into the bladder which was washed out. Its capacity was normal. The walls were healthy in appearance and the ureteric orifices normal in number, situation and appearance.

A ureteric catheter was introduced into the orifices and passed to the renal pelvis on either side without encountering any obstruction. The renal urines were collected and the excretion from the right kidney was found to be about twice as brisk as that on the left side. Examination of the urine showed:—

	Right Renal.	Left Renal.
Sp. Gr. ...	1,004.	1,002.
Albumen ...	Nil	Trace.
Centrifugal deposit ...	Epithelial cells	Epithelial cells.
Culture ...	Sterile	Sterile.

It will be noted that the specific gravity is low and there is a trace of albumen in the left renal urine.

An intravenous injection of a 0.4 per cent. solution of indigo-carmin was given. This dye was returned from the right kidney in four and a half minutes (normal time). It was not returned from the left kidney until after twenty-two minutes, and even then the peak of the elimination was not concentrated.

The right renal pelvis was then injected with a suitable radio-opaque medium and its capacity was found to be $16\frac{1}{2}$ c.cs. This is considerably larger than normal. On the left side only $4\frac{1}{2}$ c.cs. were injected before the patient complained of discomfort. Films were exposed after each of these injections—the right pyelogram showed a slight degree of hydronephrosis; the left did not show any abnormality.

Conclusion.—The hydronephrosis is evidently caused by some intermittent obstruction of the right ureter. The left kidney shows definite inefficiency and symptoms of uraemia supervene when the obstruction is active. The absence of evidence of calculus, or pressure from a tumour, suggests that the obstruction may be due to kinking of the ureter.

D.—A small Epidemic of Herpes Zoster.

The following account of an outbreak of herpes zoster supports the suggested relationship between zoster and varicella and the occasional epidemical nature of the disease.

On November 13th, 1932, Nurse M.E.B. developed zoster brachialis in the left fifth cervical root area. She had been in occasional contact with a case of varicella during the two weeks proceeding her illness.

On November 21st, 1932, Nurse H.A. had an eruption of herpes in the right fifth cervical root area.

On December 4th, 1932, Nurse L.B. had an eruption of herpes in the left fifth cervical root area.

On December 4th, 1932, Miss J.W., a patient, admitted on November 29th, 1927, developed herpes zoster in the left sixth dorsal root area.

Nurse H.A. was a contact of Nurse M.E.B. Nurse L.B. and Miss J.W. were contacts of Nurse H.A.

LVIII.—FROM THE CALDERSTONES MENTAL DEFICIENCY INSTITUTION,
WHALLEY.

Laboratory Report.—Communicated by the Medical Superintendent.

The following is a summary of the 5,449 examinations, etc., conducted in the laboratory during the year :—

Bacteriological : faeces : cultural for *B. dysenteriae* and other pathogens, 1,363 ; special isolation methods for paratyphoid group, 46 ; for tubercle bacilli, 150. Sputa for tubercle bacilli, 40. Throat swabs for K.L.B., 6. Urines, 12. Miscellaneous, 19. Serological : sigma reactions, 206 ; agglutination reactions, 2,077. Bio-chemical : urines : routine, 461 ; sugar estimation and test for ketones, 555 ; miscellaneous estimations, 66. Milks, water, solids (non-fat) and fat, 29. Blood sugar estimations, 19. Blood non-protein nitrogen, 8. Miscellaneous, 4. Microscopical : urines, 254 ; R.B.C. counts, 25 ; W.B.C. counts, 22 ; haemoglobin and colour index, 25 ; differential leucocyte counts, 21 ; abnormal blood cells, 20 ; reticulated cell counts, 6 ; miscellaneous, 6. Post-mortems, 9 (23 per cent. of deaths).

LIX.—FROM THE CATERHAM (LONDON CO.) MENTAL HOSPITAL.

General Report.—By Dr. T. LINDSAY, F.R.C.S. (Edin.), D.P.M., Medical Superintendent.

Caterham is now a complete Mental Deficiency Unit dealing with patients from the lowest grade and having a hostel attached to meet the needs of the highest. The lowest grades preponderate, and candidates for the hostel, except in a few cases, are not supplied by the mother institution, but mostly from the other institutions of the London County Council service, and in particular from Darenth Training Colony, to the Medical Superintendent of which I owe sincere thanks for his whole-hearted co-operation in enabling the best boys to be selected.

If a small number only can be taken, it follows that those most likely to succeed should be given the first chance, and candidates are selected most carefully after test and interview.

Three boys from the Hostel are now in full time employment in the neighbourhood, and various others have been sent on licence when relatives have found suitable work for them.

As will be appreciated from the following report, a large mass of evidence in various directions is being collected, and the sifting of that evidence ought to be both interesting and instructive, and perhaps enable some generalizations to be made.

The work of the medical and other staff, supervized by the Deputy and the Senior Medical Officer, is satisfactory both in quality and quantity.

Summary of tests performed in laboratory during the year :—

Urine : bacteriological and chemical, 1,127 ; sputum : bacteriological, T.B., etc., 16 ; blood : Wasserman reactions, 38 ; Dreyer's standard agglutination tests, 200 ; estimation of blood sugar, 18 ; glucose tolerance curves, 14 ; estimation of blood urea, 8 ; blood cultures, 6 ; red and white cell counts, differential counts, est. H.C., etc., 11. Faeces : bacteriological examination of *B. dys.* and *B. typhoid* organisms, 333 ; of T.B. organisms, 24 ; blood occult, 8. Throat swabs : bacteriological examination, 30. Miscellaneous : Van den Bergh's tests, examination pus, etc., 40. Histological sections : preparation and staining, 43. Post-mortem examinations : complete, male section, 6 ; female section, 20. Sent to Central Laboratory, Maudsley Hospital : blood specimens for Wassermann reaction, 481 ; c.s.f. for Wassermann reaction, cell counts, protein and Lange's colloidal gold tests, 496 ; cultures for typing of organisms and preparation of autogenous vaccines, 5.

Diphtheria.

There were nine cases—six patients and three nurses. The wards affected and the dates being as follows:—

Case.	Age.	Ward	Date.
Boy	8	F.D.1.	April 6th
Boy	15	F.D.3.	May 7th
Nurse	19	F.D.3.	May 9th
Nurse	21	F.D.3.	May 10th
Boy	10	F.D.1.	May 18th
Boy	7½	H.	August 2nd
Boy	15½	F.D.3.	August 5th
Boy	15½	F.D.3.	August 8th
Nurse	23	F.C.2.	August 22nd

} All the wards affected
harbour boys of under 16
years of age, and are
staffed by female nurses.

The first five cases occurred in F.D. block in the early spring. Isolation and passive immunization were employed to check the spread of the disease. The average prophylactic dose was 750 units of diphtheria anti-toxin of the Belmont Laboratory. Of the two nurses who contracted the disease in May, 1932, one was a night nurse in F.D.3., and the other had been in the infected ward for a few hours on relief duty, the first had refused inoculation and the second had been omitted by mistake. The other nurses, together with the other patients who had been contacts, had all been inoculated, and remained free from infection. In August there was a further short outbreak, which was easily controlled.

In all, 229 persons received prophylactic inoculation of diphtheria anti-toxin. There is no doubt of the value of this quick method of immunization against diphtheria, but as will be seen from the above table, the period of immunity, though long enough to check an outbreak, is not sufficiently lasting to prevent recurrences after the lapse of three months.

Scarlet Fever.

There were only two cases in January, one in F.D.3, and the other in F.C.1. The first was a boy aged 13½, and the second a woman aged 20. All contacts were passively immunized with 2.5 c.c. concentrated streptococcal antitoxin (scarlatina) globulins, of Messrs. Burroughs and Wellcome. In all, 38 boys, 28 girls and 29 adults were inoculated.

In addition, the Dick test was carried out on all the occupants of the remaining wards of D. block, with the following results:—

Date	Ward.	No. of patients tested.	Result.
1932			
January 13th	F.D.2.	47 boys, 9 adults	18 boys and 2 adults positive.
January 16th	F.D.1.	50 boys	19 boys positive.

Ward F.C.2 had already been Dick tested early in December, 1931, and all the positives of this ward, as well as the positives of F.D.2 and F.D.1 were passively immunized.

Where a case of scarlet fever occurs in a ward not previously Dick tested, it has been found to be more efficacious passively to immunize all the occupants without delay, irrespective of whether they are Dick positive or negative.

Dysentery.

We continued having small outbreaks of dysentery, but the disease is now well under control.

During the year there were six cases on the male side and three on the female side. The prevailing strain of organism was the B. Flexner Z., though we had one case in F.C.3 that agglutinated B. Flexner W. Besides strict isolation and the routine examination of the faeces of all contacts we

now immunize all occupants of infected wards with a dysentery vaccine which has been prepared for us by the Central Laboratory of the Maudsley Hospital from previous cases of dysentery at Caterham. The doses used are 250 million, followed by 500 million organisms in one week's time.

Prophylactic inoculation has usually been practised very promptly on the occurrence of a suspicious case in a ward; it is of interest to note, however, that the only ward in which inoculation was delayed for a matter of three weeks, three cases occurred, the third occurring about three weeks after the first.

Below is a table showing particulars of the cases:—

Patient.	Age.	Ward.	Date.	Type of organism.
			1932.	
Boy ...	17	M.C.3. ...	February 25th	B. Flexner "Z."
Male adult	21	M.C.3. ...	February 27th	B. Flexner "Z."
Male adult	23	M.C.3. ...	March 18th ...	B. Flexner "Z."
Boy ...	14	M.A.3. ...	April 30th ...	B. Flexner "Z."
Boy ...	17	M.C.2. ...	August 20th ...	B. Flexner "Z."
Boy ...	17	M.C.2. ...	August 24th ...	B. Flexner "Z."
Girl ...	17	F.C.3. ...	September 12th	B. Flexner "W."
Boy ...	10	F.D.1. ...	November 27th	B. Flexner "Z."
Boy ...	16	F.D.3. ...	November 28th	B. Flexner "Z."

In all, 322 patients have received prophylactic inoculation.

Paratyphoid.

In October of this year, one female patient of F.B. block, was returned to the hospital after being away for ten days on leave to the care of her parents, with typical clinical symptoms of typhoid.

B. paratyphoid B. was easily isolated from her stools. A search was made for a carrier amongst all possible contacts, 233 patients, 14 nurses, and 8 needleroom staff being examined. Both the Widal reaction and the examination of faeces were done, and as soon as this was completed all contacts received two prophylactic inoculations with T.A.B. vaccine at one week's interval. The vaccine was a stock one prepared at the Maudsley Laboratory, and the first dose contained:—

T.	500 million organisms	} per c.c.
Para. A.	250 " "	
Para. B.	250 " "	

the second dose:—

T.	1,000 million organisms	} per c.c.
Para. A.	250 " "	
Para. B.	250 " "	

This laborious investigation was eventually rewarded by the discovery of a carrier, from whose stools the B. Paratyphoid B. was isolated.

Besides this case, five other cases gave positive Widals, four to typhoid, and one to paratyphoid B.; these are still being investigated, but so far, no pathogenic organisms have been found in their faeces.

Patient.	Age.	Ward.	Serum agglutination.	Faeces.
Woman ...	65	B ...	Typhoid aggl. 1/50	Negative.
Woman ...	31	B ...	Typhoid aggl. 1/150	Negative.
Woman ...	69	B ...	Typhoid aggl. 1/250	Negative.
Woman ...	55	B ...	Typhoid aggl. 1/125	Negative.
Woman ...	43	B ...	Paratyphoid B. aggl. 1/50	Negative.
Woman ...	51	B ...	Paratyphoid B. aggl. 1/50	Paratyphoid B isolated.

Research Work.

Cerebro-spinal fluid.—We have now obtained specimens of blood and c.s.f. in over 1,000 defectives of all grades and ages of both sexes. The Central Laboratory of the Maudsley Hospital is performing the various serological reactions, such as the Wassermann Reaction and Meinicke test on the blood, the Wassermann reaction, cell count, total protein and Lange's colloidal gold test on the c.s.f. The results obtained are proving most interesting, but it will take some time before the mass of data can be sifted.

Chronic Discharges from Ear with Perforation.—The assessment of the value of any form of treatment is notoriously difficult, but we have been impressed by the use of mixed "antivirus" preparations in the treatment of chronic ear discharges with perforation. Eight cases in young defectives who had resisted all forms of treatment received daily instillations of 3 minims of mixed staphylococcal and streptococcal antivirin of the Glaxo Laboratories. Six cases cleared up completely in from one to three weeks, with only one relapse lasting two days. Two cases have greatly improved, but still show some morning discharge. In all these cases the prevailing organism in the discharge was the *B. pyocyaneus*.

Vitamin "A" in Raw Carrot.—An investigation into the value of Vitamin "A" in raw carrot on the health of unselected groups of low-grade defectives was commenced on October 17th, 1932. Two wards were chosen, one on the male side and the other on the female side, and the patients in each ward were divided into two equal comparable groups. One group received, in addition to their normal diet, one ounce of raw minced carrot per patient, twice weekly, the other group received their ordinary diet only. Up to the end of the year there has been little difference in the incidence of disease in either group, but it is yet too early to give any opinion on this mode of treatment. The experiment is being continued until the end of March, 1933.

Psychological Department.

Mental Tests performed during the year 1932:—

A.— <i>Verbal</i>	Terman Binet-Simon	...	...	...	236	
	Kent Emergency Oral	...	...	...	71	
						307
B.— <i>Performance</i>	Whipple Healy Tapping	...	...	...	3	
	Perseveration (Pinard's Series)	...	...	...	9	
	Kent Shakow Form Board	...	...	...	13	
	Kent Koh Block Designs	...	...	...	58	
	Koh Block Design...	...	...	...	1	
	Gaw's Series	...	...	...	44	
	Experimental Battery A	...	...	...	68	
	Goodenough's Drawing Test	...	...	...	382	
						578
						885

An attempt is being made to devise a suitable battery of performance tests for use with adult defectives of medium and lower grade, and an experimental battery is at present being tried out for these subjects.

The drawing ability of the adult defective has been investigated in order to determine the suitability of Goodenough's test as a component in such a battery. The results of the investigation are awaiting publication.

A small number of subjects have been tested with the Kent Shakow form board, the drawings for which were very kindly supplied by Dr. Grace Kent. This board is far above any similar apparatus yet devised, and it is proposed to standardize the test on normal English adult subjects.

"Tuberose Sclerosis and Allied Conditions." MACDONALD CRITCHLEY and C. J. C. EARL. *Brain* 55.3.311. October, 1932.

The following is a summary of this paper :—

1. There is an heredo-familial degeneration of most protean types, involving numerous systems of the body and exhibiting various *formes frustes*. The most constant finding is the occurrence of patches or "tubers" of sclerosis in the brain. The name Tuberose Sclerosis is considered the best general title for this disease. Sherlock's term "Epiloia" is used to denote the severest grade with mental deficiency, epilepsy and adenoma sebaceum.

2. The family history usually shows evidence of adenoma sebaceum, naevi, or other skin lesions, whilst epilepsy and psychoses are common findings. In the present series, family histories were obtainable only in twenty cases, thirteen of which showed marks of psychopathy.

3. Adenoma sebaceum is usually present, commonly of telangiectatic type, though the fibrous types also occur. Other dermatological findings are multiple fibromata, naevi, pigmented moles, vitiligo and the so-called "shagreen patches."

4. Psychologically the epiloiaes (who form the bulk of this group) are characterized by the coincidence of mental deficiency, with a primitive type of catatonic schizophrenia; the exact form of this psychotic reaction varying with the mental level at which it occurs. The onset of the psychosis is about the tenth year; screaming fits, echolalia, perseveration, repetition of phrases and words, or mutism are common, while the patients grow silent, solitary and apathetic, though liable to sudden brief outbursts of motiveless excitement similar to those seen in catatonic schizophrenics of normal intelligence. One case showed negativistic stupor. Bizarre attitudes and complex stereotyped movements of the hands are a striking feature. The degree of intelligence present is impossible to assess accurately, the psychosis and intellectual defect being inextricably intertwined. Merrill Palmer tests on such patients as were sufficiently accessible, however, showed striking evidence of the potential intelligence of the subjects as compared with their adaptive behaviour.

5. The areas of cerebral sclerosis are not strongly demarcated. They are commonest in the frontal areas and in the walls of the ventricles. Histologically both nervous and glial elements are seen to be affected, the classical feature being the occurrence of a special form of giant cell. Abnormalities also occur in the basal ganglia.

6. The kidneys are nearly always affected, and many forms of primitive tumour have been described. The tumours vary in size from a pinhead to an orange. They are strongly demarcated, and do not form metastases. Rhabdomyomata of the heart occurs relatively frequently—indeed apart from tuberose sclerosis cardiac rhabdomyomata are exceedingly rare. Retinal tumours also occur, and were present in one of our cases.

7. The clinical variants which occur are :—

- (1) Adenoma sebaceum alone.
- (2) Adenoma sebaceum with epilepsy, but no mental change.
- (3) Adenoma sebaceum with symptoms of cerebral tumour.
- (4) Visceral tumour alone (including retinal tumours).

The various theories of origin of tuberose sclerosis are not wholly satisfactory. It is essentially a developmental anomaly arising in foetal life. There is some evidence for its connection with Von Recklinghausen's Disease.

LX.—FROM THE FOUNTAIN (LONDON CO.) MENTAL HOSPITAL.

General Report.—By Dr. JAMES NICOLL, Medical Superintendent.

A.—*Analysis of routine pathological investigations.*

The following is an analysis of routine laboratory work during the year :—

Urines, 355; faeces, bacteriological, 17; blood: total counts, 20; differential, 18; reticulocyte counts, 1; bacteriological throat swabs and cultures, 69; sputa, bacteriological, 17; pus, 16; blister fluid, 1; tinea, 23; post-mortems, 17; organs cut, stained and mounted, 115; models, 3; cinematograph film taken, 100 ft; photographs taken and mounted, numerous; specimens in course of preparation, numerous.

B.—*The Thyroid Gland in the Amentias—A Histological Study.*—By Dr. J. L. NEWMAN.

An investigation into the histological appearances of the thyroid gland in the amentias was made on 90 specimens of the gland removed at post-mortem from children who died at the Fountain Hospital.

It has become increasingly evident of late that there is no hard and fast normal for the microscopical appearances of the adult thyroid, and this investigation has showed that the same is true of the gland in childhood, even such appearances as the inter-alveolar cell masses, to which importance has been attached in the past, being without special significance.

No relation could be established between a state of amentia and the appearances of the thyroid; nor were the different types of the amentias associated with appearances typical to themselves. The only group in which anything consistent could be found was the group of Mongols, comprising 22 specimens, in which evidences of activity were definitely less conspicuous than in the other groups.

A type of hyperplasia was found which is not seen in the adult. In it the epithelial cells grow syncytially and infiltrate the colloid, and the process may advance to such a degree as quite to obscure the original alveolar structure of the tissue.

The colloid may vary greatly in its appearance and its staining reactions, being hyaline, granular, or apparently mucoid, and either acid or alkaline in its staining affinities. As far as consistency is concerned these specimens throw no light on the causation of the different varieties. The acid and alkaline, however, seem to represent two different secretions and the reaction appears to be independent of the activity of the tissue as postulated by previous observers.

The state of nutrition of the patient seems to have no connection with the histological appearances of the thyroid. The effect of the season of the year is slight, hot weather tending to produce increased cellular activity but no change in the amount of colloid. Fever on the other hand at first leads to absorption of colloid and increased activity on the part of the epithelium, but if the fever is continued over-compensation is the result and the gland then reverts towards a condition of colloid storage with diminished cellular activity.

Though an association between the thyroid and thymus has been established in many abnormalities of the former, and though the thymus tends to atrophy prematurely in the amentias, no close correlation could be found in general between the two glands. But the more considerable degrees of fibrosis in the thyroid were associated with absence of the thymus.

C.—*The Histology of the Testis in Amentia.*—By Dr. C. GUY MILLMAN.

The examination of a series of tests has been carried out. The work is as yet unfinished, but up to the present there has been found no correlation

between the histological appearance of the gland and the degree and type of amentia. It is possible, however, that in a large number of specimens the interstitial tissue is present in subnormal quantity. It is impossible accurately to assess the significance of this point without the examination of a series of normal controls.

D.—*The Incidence of Gingivitis in Mongolian Imbecility.*—By Dr. C. GUY MILLMAN.

In consequence of the observations of Mr. S. E. Pomeroy, the consulting dental surgeon, 51 cases of mongolian imbecility were examined. Of these, 46 were found to show evidence of either past or present gingivitis. A bacteriological examination of the material from the gums of those patients suffering from this condition was made, and in every case the usual mixed flora of the mouth infection was present in a degree relative to the severity of the condition. No single causative organism could be isolated. This condition is not readily amenable to any form of treatment, and its prevalence in mongols appears to be further evidence of the epiblastic dyscrasia which is a fundamental anomaly in this type of deficiency.

E.—*Cardiac Abnormalities.*—By Dr. L. C. COOK, D.P.M., and Dr. C. GUY MILLMAN.

Two cases of bicuspid aortic valve have been investigated. One case, associated with microcephaly and a dilated lateral ventricle, was of particular interest in that sudden death occurred, apparently due to the rupture of the bicuspid valve, which was of the fenestrated type. The other case was associated with mongolism. These are in preparation for publication.

F.—*The Wassermann Reaction in Young Mental Defectives.*—By Dr. C. GUY MILLMAN.

With the original intention of examining the Wassermann reaction of the blood in all the patients at this hospital, in order to ascertain the correlation, if any, between congenital syphilis and the various degrees and types of amentia, specimens were submitted to the Central Pathological Laboratory of the L.C.C. Mental Hospitals Department at the Maudsley Hospital. The results of the first two batches showed a much higher incidence of positives than might have been expected from the clinical aspect of the cases, while the third batch gave completely negative results. Subsequent batches showed a similar variability. Although the total number of cases in each batch was small, the variations of the percentage of positive results, in the absence of mathematical calculation, appeared to have some significance. As it was understood that other laboratories had experienced similar results it was decided in the first instance to confine our attention to the elucidation of the problem of these anomalous results. Since the beginning of this investigation the Wassermann and Meinicke reactions have been performed on the blood of 304 patients whose ages ranged from 1 year to 17 years, and 56 working patients whose ages ranged from 17 to 62 years. In order to eliminate possible variables, the blood was collected with dry sterile needles at approximately the same time each day, the patients' temperatures were taken, and all cases of pyrexia excluded. All cases giving a positive result were repeated several times, and the majority gave negative results on one or other occasion. The specimens for repeat reactions were included in the same batches as original specimens from further cases, and it was found that on those occasions when a reaction changed from positive to negative the whole batch results tended towards negativity, and when the reactions remained positive the results tended towards positivity. It should be pointed out, however, that the technique adopted is a modification of the No. 1 M.R.C. method

which has given a high degree of accuracy in adult cases, and has shown a satisfactory correlation with the clinical effects of treatment in neuro-syphilitics, and a complete freedom from a batch tendency to positivity or negativity, except where produced by the inclusion of a large number of specimens from mentally defective children. Control specimens were submitted to other laboratories with similar results. Experiments were carried out by Dr. Mann, assisted by Mr. Partner, at the Central Pathological Laboratory, with a view to modifying the technique to avoid these anomalous results. 599 specimens from the 360 cases were examined, repeated reactions being performed on single specimens in many cases. Variations in the nature of the antigen were eventually found to have direct bearing on this problem. The work on these lines has not yet reached finality. With a modified antigen the final results were as shown in the following table; a fair proportion of those read as negative, however, still showed a slight prevention of haemolysis :—

	Positive Wassermann + Positive Meinicke.	Positive Wassermann + Negative Meinicke.	Negative Wassermann + Positive Meinicke.
Working patients, 56	2. = 3.6 per cent.	1. = 1.8 per cent.	1. = 1.8 per cent.
Children, 304	... 5. = 1.6 per cent.	0. = 0 per cent.	0. = 0 per cent.

An important feature noted in the course of this work in the manner in which the reaction in the case of children may swing from a strong positive to a clear negative, while a certain number of cases gave an indefinite reaction, characterised by a definite but not complete prevention of haemolysis in all dilutions. This would suggest a high degree of lability of the serum.

These investigations indicate that the Wassermann reaction in young subjects, and especially in relation to mental defectives, must be considered with extreme caution. Although there is reason to believe that similar findings have occurred in a sporadic manner in general hospital practice, the problem does not appear to have attracted serious attention, as this type of case does not usually arise in such large numbers as are now being dealt with at the Central Pathological Laboratory.

It would appear that anomalies of such sera may give rise to non-specific reactions, and as the result of these investigations and others conducted at the Central Pathological Laboratory in relation to similar institutions, the subject is receiving further careful consideration.

LXI.—FROM THE LEAVESDEN (LONDON CO.) MENTAL HOSPITAL.

Report on Research Work.—By DR. R. M. STEWART, F.R.C.P., D.P.M.,
Medical Superintendent.

A.—Routine Laboratory Work.

The following is a summary of the examinations conducted in the laboratory during the year :—

Biochemistry : Urine analysis, 2,603 ; blood sugars, urea, etc., 34 ; occult blood, 2 ; c.s.f. examination, 25. Bacteriology : cultures (faeces, urines, bloods, etc.), 1,368 ; swabs, various 67 ; agglutinations. Widal's, etc., 100 ; demonstrations of organisms, 456 ; demonstrations of worms, 14 ; other specimens, 10 ; haematology : blood counts, grouping, differentials, etc., 319. Histology : sections prepared, mounted, etc., 1,028. Museum : pathological models in wax, specimens mounted, preserved, etc., 46. Post-mortem examinations, 56 (73 per cent. of total deaths). Photography : photomicrography, 127 ; routine and special photography, 809. Specimens sent to Central Laboratory, 343.

B.—The Morphology of the Brain in Mental Deficiency.

The work in connection with the morphology of the brain in mental deficiency is being continued.

In order to obtain a more general survey of material, head length, head breadth, ear to ear, head height, brain volume, body weight, arm length and foot length have been measured in 269 unselected defectives. The results have been analyzed in order to find out what general changes occur in defectives as mental age alters. These data have given us a "background" of what is happening generally in the body and brain, so that the significance of any changes which may later be found in particular parts of the brain may be interpreted more precisely. It has been found that there are general changes affecting all the parts measured, showing the necessity for studying the patients as wholes before proceeding to the study of particular parts. The amounts of these general changes have been measured so that allowance may be made for them later on.

C.—The Surgical Treatment of Typhoid Carriers.

The surgical treatment of typhoid carriers is founded on two facts: (1) the presence of typhoid bacilli in the gall bladder and (2) the discovery that the gall bladder forms the chief habitat of the typhoid bacilli in the carrier. The operation of choice is cholecystectomy, although clinical and bacteriological cure has been recorded following simple drainage of the gall bladder.

It was decided to subject to the operation of cholecystectomy, typhoid and paratyphoid carriers at this hospital, whose general condition seemed satisfactory, and three male and four female carriers were selected. Two were carriers of *B. paratyphosus B.* and five of *B. typhosus*.

Of the seven cases operated on, two succumbed to cardiac or pulmonary complications following the operation: in the remaining five cholecystectomy was successful in freeing the stools from typhoid bacilli.

The following brief notes of the cases are of general interest.

1. C., female, age 62. Imbecile. Cholecystectomy performed May 31st, 1932, previous to which 80 cultures had been done dating back to February 16th, 1926. Of these, 32 were positive to *B. typhosus*.

A culture from gall bladder at time of operation was also positive.

Afterwards 8 cultures were done, all being negative. Patient died June 15th, 1932. Cultures from the duodenum, lower bowel, cystic duct, bladder, spleen and right kidney, taken at the post-mortem were all negative.

2. F., female, age 23. Imbecile. Cholecystectomy performed April 13th, 1932, previous to which 9 cultures had been done dating back to March 16th, 1931. Of these 6 were *B. paratyphosus B+*.

A culture from gall bladder at time of operation was also positive.

Afterwards 62 cultures were done lasting until October 11th, 1932, only one (the first, April 18th, 1932.) being positive.

D., female, age 60. Imbecile. Cholecystectomy performed May 31st, 1932, previous to which 17 cultures had been done dating back to March 16th, 1931. Of these, 8 were positive to *B. paratyphosus B.*

A culture from gall bladder at time of operation was also positive.

Afterwards 46 cultures were done lasting until October 11th, 1932, all being negative.

S., female, age 50. Imbecile. Cholecystectomy performed April 13th, 1932, previous to which 7 cultures had been done dating back to March 16th, 1931. Of these, 5 were positive to *B. paratyphosus B.*

A culture from gall bladder at time of operation was also positive.

Afterwards 68 cultures were done lasting until October 11th, 1932, all being negative.

H., male, age 48. Imbecile. Cholecystectomy performed February 18th, 1932, previous to which 66 cultures had been done dating back to May 31st, 1926. Of these, 29 were positive to *B. typhosus*.

A culture from gall bladder at time of operation was also positive.

Afterwards 34 cultures were done, lasting until August 17th, 1932, all being negative.

B., male, age 43. Imbecile. Cholecystectomy performed February 18th, 1932, previous to which 55 cultures had been done dating back to September 27th, 1926. Of these, 19 were positive to *B. typhosus*.

A culture from gall bladder at time of operation was also positive.

Afterwards 31 cultures were done lasting until August 17th, 1932. The second specimen dated March 3rd, 1932, being the only one positive.

C., male, age 31. Feeble-minded. Cholecystectomy performed June 1st, 1931, previous to which 57 cultures had been done dating back to June 1st, 1926. Of these, 24 were positive to *B. typhosus*.

A culture from gall bladder at time of operation was also positive.

Patient died on June 3rd, 1931. A culture from the spleen taken at post-mortem was negative.

LXII.—FROM THE MONYHULL COLONY, BIRMINGHAM.

General Report.—By Dr. A. M. McCUTCHEON, F.R.F.P.S., Medical Superintendent.

A.—*Routine Laboratory Work.*

As we have done for some years past, in association with the Joint Board of Research, we have had an examination of faeces and blood for infection by dysentery, enteric and food poisoning groups, in each admission. The results continue to show that the great majority of the cases have had an infection although there is never any definite history of such an attack. An investigation as to the areas from which the patients came seemed to indicate that the results were general.

Summary : Faeces, 212 ; throat swabs, 1 ; sputa, 2 ; water analyses, 2. Blood : Wasserman, 140 ; Widal's, 135.

B.—*An outbreak of contagious abortion in an Institution Dairy Herd.*

Owing to the grave risk of infection spreading to patients and staff, to the risk of considerable financial loss amongst the herd, and the marked dislocation in breeding and lactation, this account of a bacillus abortus infection may be of some interest.

There are in the Colony three farms, Kingswood, where 40 head of milking stock are kept, Bells, where 35 head of milking stock are kept, and Crabhall, where are kept sick animals and isolation cases. The whole herd of dairy shorthorn cattle, which is tuberculin tested and recorded, numbers about 140 head and we raise all our own stock, having bought no stock (other than pedigree bulls) since June 1929.

The outbreak commenced at Bells Farm on June 6th, 1930, and within 14 days there were 4 more cases, the beasts aborting at from 5 to 6 months. The Kingswood herd was at once isolated together with patients and staff, utensils, also all young stock not in contact with the Bells herd. Our veterinary surgeon, T. N. Gold, Esq., M.R.C.V.S., confirmed the diagnosis by having Widal's done at the Royal Veterinary College, London. The stock bulls at Kingswood and Bells and in-calf heifers were blood tested. All were negative except the bull at Bells, while none of the heifers served by this bull reacted, and all went on and calved normally. None of the cows which aborted had been served by him. By July 29th, there were 10 cases in all.

The bull and the cows which had aborted were isolated at Bells Farm, and stringent precautions were taken with regard to the attendants, utensils, discharges, dung, etc. Izal was used daily in the sheds, utensils, and about the animals, and all going in and out of the sheds used a tub of the same disinfectant for the soles of their boots. Iodoform pessaries and douches of Lugol's solution were used with the infected animals.

The remaining in-calf heifers and heifers for service were blood tested, found negative and then isolated at Crabhall Farm. They were again blood tested some weeks later, when it was found that they were all negative and could be moved to the main herd at Kingswood Farm, where no cases occurred.

Those remaining at Bells Farm were very carefully watched and great care taken in the animals' toilet. They were treated with a mixed vaccine of *B. abortus*, streptococci, *B. coli* and *B. pyogenus*. The vaccine was used in preference to any live cultures, to lessen the risk of any possible excretion of the bacilli in the milk, and to lessen the risk of dislocation in the breeding cycle, as both barren and in-calf cows could be so treated without the risk of the excretion of bacilli after calving, and because the veterinary surgeon had proved the efficacy of this method over a period of some eight years with several thousand cases.

All animals up to within six weeks of calving were inoculated, and in turn the others including six of the aborters. The remaining four aborters and the bull were fattened and sold because they were either aged or inefficient milkers. Each animal had two injections during a lactation period, at an interval of 10 days. This was repeated in their second gestation counting from the time of the outbreak.

The results have been most remarkable. Only one cow has had a premature calf, and then everything was negative, all the other calves have been full time and births normal.

The cause of the outbreak is believed to be infection brought on to the farm pastures through dogs, foxes and birds, as in most of the surrounding farms the disease was rampant. One finds that most farmers do not regard this trouble seriously, especially where they are not very concerned with breeding. When they have an aborter they just get rid of it, buying in another animal to keep up their milk production, and so reinfection of the farms is constantly taking place.

The opinion of our veterinary surgeon, with which we agree, is that the good results here obtained were due not only to the careful diagnosis and inoculation, but to the very prompt measures taken by the bailiff and to the rigid measures of isolation and disinfection which were enforced.

The account of this outbreak has not previously been published, as we wished to wait a sufficient length of time to prove that the methods could stand the test of time over another calving time. It would appear that the danger is now over from this outbreak.

C.—*Investigation of the family histories of 1,200 defectives (475 males, 725 females).*

(a) 1. *Details of births, deaths, etc., in the defective's own generation.*

	Number of	
Children born (3,440 males, 3,493 females)	6,933	(Average family 5·7).
Children died	1,795	25·8 per cent. (of these approximate 8 per cent. accidental).
Males died	968	53·8 per cent. } of the total
Females died	827	46·2 per cent. } deaths.
Miscarriages (out of 7,219 pregnancies)	286	·23 per family.*
		= 3·9 per cent. of total pregnancies.

* (This is obviously low. B. Whitehouse estimates that the usual abortion rate approximates 17 per cent. (*B.M.J.* 20, 8, 32). But the greatest difficulty is met in getting any reliable information as to miscarriages).

2. *Illegitimacy rate among the defectives.*

Number of illegitimate defectives 61 = 5 per cent.

3. *Details of defectives' illegitimate children.*

Number of defectives with					
1 illegitimate child	...	...	...	...	17
2 illegitimate children	...	...	...	...	9
3 illegitimate children	...	...	...	...	1
4 illegitimate children	...	...	...	...	2
Total children					46

These are very low, as we have for 10 years admitted mainly via the school, and we are now experiencing beneficial results of early control and training, especially during adolescence.

Rate of illegitimate births over the 587 women of child-bearing age whose records were examined, 7.8 per cent.

4. *Details of mentally abnormal children born.*

Number of others in the group who are mentally defective	...	...	...	...	181
Insane	...	...	...	...	13
Epileptic	...	...	...	...	13
Number of defectives under review	...	...	...	...	1,200

Gives a total of 1,407 abnormal children out of 6,933 births: 20.2 per cent.

5. *Details of twin births.*

Number of sets of twins in the total families investigated	52
(17 sets males, 19 sets females, 16 sets male and female)	
Number of defectives amongst the twins	11
Rate of deficiency among the twin births	10.5 per cent.

There were two sets of twins in which all four children were defective.

6. *Place of defectives in the family.*

Number of defectives who were "only" children	147	12.2 per cent.	} 27.2 per cent.
"First" children	180	15 per cent.	
"Last" children	233	19.4 per cent.	

The place of the defective in the family might therefore appear to be a probable factor in 46.6 per cent. of the defectives, perhaps of a contributory nature.

(b) *Factors noted affecting the mother during pregnancy.*

	Per cent.
Privation in 2 cases	.16
Illness in 1 case	.08
Injury in 1 case	.08
Mental shock in 2 cases	.16
Giving total number of cases	.5

(c) *Factors noted affecting the child during or after birth.*

	Per cent.
Accident fall in 1 case	.08
Injury to head in 3 cases	.25
Neglect in early life in 1 case	.08
Infantile convulsions in 5 cases	.4
Febrile disease in 6 cases	.5
Hydrocephalus in 1 case	.08
Encephalitis lethargica in 7 cases	.58
Meningitis in 4 cases	.32
Epilepsy in 5 cases	.4
Giving total number of cases	2.75

In connection with the factors enumerated above as acting on the child after conception, hereditary influence as well, may possibly be exerted in the following:—

Epilepsy in infancy associated with intemperance of father. *Fall in infancy* associated with tuberculosis of father. *Infantile convulsions* associated with history of apoplexy in both paternal and maternal grandparents. *Head Injury* associated with

insanity of father. *Head Injury* associated with feeble-mindedness of mother. *Fright to mother* associated with history of cerebral haemorrhage in mother and in grand parents on both sides.

(d) *Factors in which heredity may operate.*

1. *Acquired insanity.*

	Times.
In father Appears	22
In mother "	31
In both father and mother "	2
In paternal grandfather "	12
In paternal grandmother "	6
In maternal grandfather "	16
In maternal grandmother "	13
Family history "	43
Factor appears	145

2. *Intemperance.*

	Times.
In father Appears	108
In mother "	33
In both father and mother "	7
In paternal grandfather "	10
In paternal grandmother "	4
In maternal grandfather "	13
In maternal grandmother "	4
Family history "	1
Factor appears	180

3. *Epilepsy.*

	Times.
In father Appears	15
In mother "	19
In paternal grandmother "	10
In maternal grandfather "	3
In maternal grandmother "	4
Family history "	9
Factor appears	60

4. *Tuberculosis.*

	Times.
In father Appears	76
In mother "	62
In both father and mother "	10
In paternal grandfather "	13
In paternal grandmother "	9
In maternal grandfather "	26
In maternal grandmother "	20
Family history "	1
Factor appears	217

5. *Neurosis.* (Neurasthenia, spasmodic asthma, chorea and hysteria.)

	Times.
In father Appears	12
In mother "	9
In both father and mother "	1
In paternal grandfather "	3
In paternal grandmother "	2
In maternal grandfather "	7
In maternal grandmother "	4
Family history "	1
Factor appears	39

6. *Feeble-mindedness.*

	Times.
In father Appears	5
In mother "	33
In both father and mother "	8
In paternal grandmother "	2
In maternal grandmother "	1
Family history "	66
Factor appears	115

7. *Syphilis.*

	Times.
In father Appears	15
In mother "	2
Factor appears	17

Thus recognizable factors are found 773 times.

In many cases, the factors are found combined in certain of the parents or grandparents as follows:—

Tuberculosis with Syphilis	... .. in	1 parent.
" " Epilepsy	... .. "	4 parents.
" " Insanity...	... .. "	1 parent.
" " Intemperance	... .. "	11 parents and 1 grandparent.
" " Neurosis	... .. "	2 parents.
Intemperance with Neurosis	... .. in	3 parents.
" " Epilepsy	... .. "	2 parents.
" " Insanity	... .. "	6 parents.
" " Syphilis	... .. "	1 parent.
Epilepsy with Syphilis	... .. in	2 parents.
" " Insanity	... .. "	1 parent.

Neither consanguinity nor age of parents appears to be an important factor in this series of cases, so far as I can ascertain.

The 1,200 cases were not in any way selected except for the inclusion of four Education Act cases whose histories were known, and who were included to make a level 1,200 cases. The others were taken in serial order from the admission registers. The 74 cases, mentioned below, were included with the others. Their inclusion has, no doubt, raised the percentage of those in whom no definitely assigned cause can be given.

Of the series of 1,200 cases, 580 or 48·3 per cent., did not in their histories furnish definitely assignable causes. This figure includes 74 cases in whom no reliable family history is forthcoming. They are cases, many of whom were orphans or abandoned children, and those taken over by the Poor Law Authorities especially during the years of the Great War, and whose antecedents and families we are unable satisfactorily to trace.

In the following of these 580 cases, however, hereditary effects will probably be inferred in spite of lack of a definite family record.

Microcephalics	... ..	8
Mongols	... ..	4
Cases with defective brothers or sisters	... ..	13
Cases with epileptic brothers or sisters	... ..	3

In the majority of the remainder there are found multiple stigmata of degeneracy, seeming to indicate germinal variation, although the record is lacking in the family history, so far as we have been able to obtain this.

D.—*Investigation into Wassermann and Widal Reactions, in 360 admissions and transfers.*

For three years past, in association with the Birmingham Joint Board of Mental Research under Dr. F. A. Pickworth, we have made complete serological examinations of all admissions and transfers. These observations were made not only to try to determine the incidence of any intestinal infection prior to admission, but also the syphilis rate, and were all done under standardized conditions.

1. *Direct admissions from defectives' homes.*

One hundred and sixty-eight patients of whom 83 or 49·4 per cent. gave positive Widal's as under :—

Dys. Flexner Y	...	...	...	...	...	65
Dys. Flexner Y : Shiga	...	...	...	...	...	2
Dys. Flexner Y : Gaertner	...	...	...	...	...	5
Dys. Flexner Y : Aertrycke (mutton)	...	...	...	...	...	3
Dys. Flexner Y : Paratyphoid A	...	...	...	...	...	1
Dys. Flexner Y : Paratyphoid B : Aertrycke (Newport)	...	...	...	...	...	1
Aertrycke (mutton)	...	...	...	...	...	1
Sonne	...	...	...	...	...	1
Gaertner	...	...	...	...	...	3
Paratyphoid B.	...	...	...	...	...	1
Wassermann positive in 6 cases—3·5 per cent.*						

2. *Transfers from other institutions.*

Fifty-six cases, of whom 24 or 42·8 per cent. give positive Widal's as under :—

Dys. Flexner Y	...	...	...	...	...	23
Dys. Flexner Y : Aertrycke : (mutton and Newport)	...	...	...	...	...	1
Wassermann positive in 6 cases—10·7 per cent.						

3. *Transfers from School Section to Adult Section of Monyhull Colony.*

One hundred and thirty-six cases of whom 81 or 59·5 per cent. give positive Widal's as under :—

Dys. Flexner Y	...	...	...	...	...	75
Dys. Flexner Y : Shiga	...	...	...	...	...	1
Dys. Flexner Y : Sonne	...	...	...	...	...	3
Dys. Flexner Y : Gaertner	...	...	...	...	...	1
Dys. Flexner Y : Aertrycke (mutton and Newport)	...	...	...	...	...	1
Wassermann reaction positive in 10 cases—7·3 per cent.						

Of the 136 cases so transferred within the colony :—

Sixty-seven in the first instance were transfers from other institutions ; 40 of these gave positive Widal's, 59·7 per cent. incidence. Sixty-nine in the first instance were admitted direct from their homes ; 41 of these gave positive Widal's, 59·4 per cent. incidence.

In the total 360 cases :—

There were thus 22 positive Wassermann reactions, 6·1 per cent., and 188 positive Widal reactions, 52·2 per cent. The incidence of positive Widal's in the case of direct admissions was 49·4 per cent. ; from other institutions, 42·8 per cent. ; and internal transfers at the Colony, 59·5 per cent. ; (approximately 50 per cent. of whom had previously been transferred from other institutions).

Bacteriological examinations of all the faeces gave a number of findings of organisms held to be non-pathogenic, such as *B. proteus*, Friedlander, *pyocyaneus*, *fluorescens*, Grunthal, paragrünthal, *coli aberrans*, *staphylococcus albus*, *aureus*, *streptococcus non-haemolyticus*, *faecalis*, *equinus*.

Pathogenic organisms, streptococcus haemolyticus, B. Morgan 1, McConky, Flexner Y, were also found. These were detected only in the routine examinations, and no clinical signs or symptoms were present. The organisms disappeared on treatment.

It is interesting to note that none of the 360 cases had suffered from any form of intestinal disease whilst under our care, nor did we obtain any reliable history of any such attack prior to admission.

LXIII.—FROM THE ROYAL EASTERN COUNTIES INSTITUTION FOR THE MENTALLY DEFECTIVE, COLCHESTER.

General Report.—By Dr. F. DOUGLAS TURNER, Medical Superintendent.

A.—*Research Department.*

An investigation into the causes of mental deficiency has now been in progress here for two years. The work continues to be conducted by Dr. L. S. Penrose, with the assistance of Miss D. E. Newlyn. The original aims of the Research Department, namely, the examination and classification of all patients together with detailed study of family histories, are kept steadily in view. Up to the present time over half the patients have been individually examined and classified. Family history study is slow work and, so far, this part of the investigation is not nearly half way to completion. We expect, however, very soon to increase the personnel of the department by acquiring another research assistant. This will enable the family history studies to proceed at an even rate with the individual examinations.

While it is yet too early to pass any judgment on the outcome of our researches in general, certain specific problems which presented themselves in the course of the work have been given particular attention and the results reported upon. As can be gathered from the following summaries of the scientific publications from this department, among the cases which have been singled out for special study are the mongolian imbeciles and those mentally defective patients of sub-cultural mentality who are usually classified simple primary aments.

Other investigations which are in progress and will be reported upon in due course are the ascertainment of the relationship between head size and intelligence, of the incidence of congenital syphilis and of the intelligence of children of certified mentally defective patients. Although some of these children are backward or of low grade mentality, a few are of average intelligence or may even be slightly above normal standards.

1. *On the Interaction of Heredity and Environment in the Study of Human Genetics (with special reference to Mongolian Imbecility).*—By Dr. L. S. PENROSE, *Journal of Genetics*, April, 1932.

In the case of many human pathological conditions both heredity and environment may be effectively involved. It is often convenient to consider the part played by heredity in such cases as being the determination of susceptibility. Only seldom is it possible to analyse cases subjected to a constant environment, and frequently it is difficult to define precisely what the relevant environmental influences are.

It is suggested that a consideration of sibships in which only one person is affected would enable an analysis of environmental factors to be made. If the families are now grouped according to intensity of environmental action, the true proportion of susceptible individuals should be approached asymptotically. In the case of Mongolism the age of the mother is an environmental factor of much potency, and it is shown that the familial incidence rises steadily as the maternal age increases. If maternal age is not allowed for as an aetiological factor the apparent familial incidence is extremely low. The high mortality rate of Mongolian imbeciles is an

additional complication. The condition is often not recognized before the age of one year, and there is every reason to suppose that differential mortality is operative before this. Utilizing the extant data together with his own, the writer further corrects the familial incidence of susceptibility to Mongolism, assuming that the mortality before the age of one year is substantially at the same rate as at later periods. It is strongly indicated that if the masking influence of maternal age and low viability are eliminated, the true familial incidence of susceptibility is over 20 per cent. It is not considered likely that either a single dominant or a single recessive gene can account for the findings, but it is tentatively suggested that two complementary dominant genes may fit the data.

2. *Some Modern Methods of Research in Mental Deficiency.*—By Dr. L. S. PENROSE. A paper read at the Annual Meeting of the Scottish Association for Mental Welfare and printed in the report of the Conference. June, 1932.

The same reprinted in slightly abridged form in the *Scottish Educational Journal*, July, 1932, and the *Scottish Nurse*, August, 1932.

A lecture explaining the outlook of the Research Department and describing some of the results to date.

3. *Primary and Secondary Amentia.*—By Dr. L. S. PENROSE. *Mental Welfare*, July 1932.

A discussion on the problem of the correct scientific classification of mentally defective patients. The difficulty of the application of the terms primary and secondary is shown by reference to an actual case history.

4. *Mental Deficiency—the Sub-cultural Group.*—By Dr. L. S. PENROSE. *Eugenics Review*, January 1933.

A short paper giving the writer's views on the causation of sub-cultural mental deficiency. Facts are described indicating that, in so far as it is hereditary, this kind of mental deficiency must be transmitted in a complex manner involving a great variety of mendelian characters.

5. *The Relative Effects of Paternal and Maternal Age in Mongolism.*—By Dr. L. S. PENROSE. *Journal of Genetics*, February, 1933.

In this communication the analogy is pursued between Mongolism and certain characters in the guinea-pig, determined by maternal age and studied by Wright.

The effect of paternal age in determining such characters in the guinea-pig is negligible, and the same is found to be true of Mongolism in 150 families containing affected individuals.

6. *A Study in the Inheritance of Intelligence.* (The analysis of 100 families containing Sub-cultural Mental Defectives).—By Dr. L. S. PENROSE. *British Journal of Psychology*, April, 1933.

A thorough analysis of the data presented as a summary in the article in the *Eugenics Review*, referred to above.

B.—Psychological Tests.

During the year 1932, in addition to the psychological work done specially in connection with the Research Department, 614 routine mental tests were carried out by Dr. F. C. Osgood and other medical officers of the institution. The number was made up as follows :—

Stanford-Binet Scale	...	...	...	225
Burt's Reasoning Tests	...	...	...	10
Porteus Maze Test	...	...	...	159
Koh's Block Design Test	...	...	...	101
Healy's Pictorial Test, No. 1	...	...	...	98
Healy's Pictorial Test, No. 2	...	...	...	16
Merrill-Palmer Tests	...	...	...	5

C.—*Pathological and Clinical Investigations.*

The laboratory, which was established during 1931, has proved to be of great value both in the diagnosis of physical disorder among the patients and as an aid to research.

The following is a summary of the 2,277 examinations made during the year 1932 :—

Schick test, 78. Urine: routine, 88; special, 5. Blood: grouping, 950; cell counts, 3; specimens sent to central laboratories, 1,141. C.s.f. examinations, 3. Bacteriological swabs and cultures, 5. Post-mortem examinations, 4 (22 per cent. of deaths).

LXIV.—FROM THE STOKE PARK COLONY, STAPLETON, BRISTOL.

General Report.—By DR. R. J. A. BERRY, F.R.C.S., Director of Medical Services.

During the year 1932, there has been continued that systematic physical, mental and medical examination referred to in the last report. Under this there have now been examined 950 patients—360 males and 590 females—and of these there are now available very complete records. The collective results attained by these methods for a group of 162 high-grade feeble-minded women have been published in the *Bristol Medical-Chirurgical Journal*, Volume xlix, No. 185, p. 177. A similar investigation is now in progress for a heterogeneous group of low-grade inmates, the examination of which will obviously require more time on account of the increased difficulties induced by their mental condition.

Part of the research laboratory has been re-organized and re-equipped in order to facilitate the histological examination of the brain, which is now undertaken systematically whenever opportunity offers. A paper embodying some of the first results of an examination of the cellular changes in the brains of the mentally defective will be included in the Burden Memorial Volume on Mental Deficiency. This volume is now in the press, and will shortly be published by Messrs. Macmillan and Co., London. Its cost is being generously defrayed by the Warden, Mrs. R. G. Burden. It is a tribute from the medical and technical staffs of the institution to the memory of the late Reverend H. N. Burden, whose generosity and foresight made it possible for research work, on its present scale, to be undertaken in the Colony. It is hoped to include in this volume such published and unpublished original contributions as will give a clear account of recent progress in mental science and of the methods now pursued in Stoke Park Colony to assist in the furtherance of that progress.

It may not be amiss to point out that these investigations, correlated with the general study of the nervous system from other scientific and non-mental laboratories, suggest that progress in mental science is hampered by purely legal conceptions, which, however, necessary for the preservation of the liberty of the subject are not in accord with known scientific facts concerning the evolution and ontogenetic development of the human brain. The latter leads to the conclusion that the amentias and dementias are phases only of cerebral neuronie disorder, sometimes developmental, sometimes destructive, in origin. Modern research, scientific and mental, thus tends to throw the basal causes of primary amentia back to the embryonic and genetic factors concerned in the life of the individual. This does not imply that mental deficiency, as a legal conception, is directly or necessarily inherited from an exactly similar legal view of the parent. It rather denotes that it is not so much the mental deficiency which is inherited as an impoverished nervous system, and the former is the symptom of the latter. Thus the parent may provide the impoverished nervous system, of which the symptoms are displayed by the offspring in a form recognizable by the Law. The case of Charles William Ross, recently

hanged for the murder of two young women in Kenya Colony, and whose case has been described by Dr. H. L. Gordon of Nairobi with these Stoke Park methods of objective examination as the basis of his psychological examination, appears to offer an illustrative case.

Publications from the Institution during the year 1932 include the following :

"Brain Structure in Relation to the Mind." By R. J. A. BERRY. *Journal of Neurology and Psycho-pathology*, 1932, xiii.

"Mental Deficiency Pictorially Recorded." By R. J. A. BERRY. *British Medical Journal*, October 29th, 1932.

"Mental Deficiency : An analysis of the Mental, Physical and Medical Characteristics of a group of 162 Adult Feeble-minded Women." A collective investigation by the Director of Medical Services and the Consultant and Psychological staffs. *Bristol Medico-Chirurgical Journal*, Autumn 1932, Vol. xlix.

"Mental Deficiency : Some Family Histories of an Unselected Group." By R. J. A. BERRY. *Eugenics Review*, Vol. xxiv, January, 1933.

"A Case of Porencephalic Imbecility." By R. J. A. BERRY and R. M. BATES. *British Medical Journal*, May 7th, 1932.

Routine medical, bacteriological and Wassermann examinations continue to be made, and the last mentioned, under the charge of Professor J. A. Nixon, promises to afford some instructive data for a future study of the incidence of syphilis as an additional and complicating factor in the genesis of low-grade primary amentia.

APPENDIX A.

Circular No. 772.

April, 1932.

1. I am directed by the Board of Control to invite the attention of the Local Authority to the importance of co-operation between the Visiting Committees of the Mental Hospitals and the Committees for the Care of the Mentally Defective.

2. Owing to the shortage of accommodation for defectives, many of the lower grades are still certified under the Lunacy Acts and sent to Mental Hospitals, a practice which the Board strongly deprecate. Moreover, many defectives of the medium and higher grade suffer from various forms of psychoses which render temporary treatment in a Mental Hospital necessary. Cases of both kinds are from time to time discharged from Mental Hospitals either as "recovered" or "relieved," but, owing to the lack of any organized system of notification, the discharges are not reported to the Committee for the Care of the Mentally Defective, whose duty it is to "ascertain" the defectives within their area and to take the appropriate steps for their care and supervision. I am to point out that the results of the discharge, particularly of mentally defective persons who may have recovered from the mental disorder which necessitated Mental Hospital treatment, are frequently disastrous both to themselves, their relations, and to the community. They cannot recover from the underlying mental defect which renders them incapable of managing themselves or their affairs, and many of them need the care, supervision and protection afforded by the Mental Deficiency Acts.

3. The Board accordingly suggest that, before any patient showing signs of mental defect is discharged from a Mental Hospital, the Superintendent should communicate with the Medical Officer of the Committee for the Care of the Mentally Defective, who should, if possible, see the patient and advise whether action should be taken under Section 16 of the Mental Deficiency Act, 1913 (i.e., transfer to an Institution for defectives), or whether the patient is suitable for guardianship, or whether supervision in the patient's own home would afford adequate protection. If the patient is discharged without these questions having been decided, the name and address should be at once sent to the Committee for the Care of the Mentally Defective.

4. The Board desire to take the opportunity of drawing attention to another aspect of this question in which the co-operation of both Committees is necessary. As indicated in paragraph 2 above, the shortage of accommodation for mental defectives has resulted in many defectives being sent to Mental Hospitals. But there is also a serious shortage of accommodation in most parts of the country for patients requiring reception under the Lunacy Act, and this is aggravated by the admission of mental defectives to Mental Hospitals where they occupy beds urgently needed for patients under that Act.

5. The Committees should, therefore, examine the position with a view to ascertaining whether there are in the Mental Hospitals defectives who are suitable for removal to other accommodation. The possibility of such transfers if of special importance in the present financial situation, in view of the economy that might be effected by making alternative accommodation for defectives, thereby obviating or minimising the provision of additional Mental Hospital beds which would generally involve heavier expenditure than the provision of beds elsewhere for mental defectives,

6. The Board will be glad if the two Committees concerned will give these matters their careful consideration. A copy of this letter has been sent to the Medical Superintendent of the Mental Hospital.

1. The Clerk to the Local Authority.
 2. The Clerk to the Visiting Committee of each County and Borough Mental Hospital.
 3. The Clerk to the Committee for the Care of the Mentally Defective.
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APPENDIX B.

COUNTY and BOROUGH MENTAL HOSPITALS, REGISTERED HOSPITALS, and LICENSED HOUSES in England and Wales with the Names of the Medical Superintendents, and Clerks to Committees of Visitors; Licensees, Clerks to Visitors, and Medical Visitors, of Licensed Houses (Corrected to August, 1933.)

COUNTY AND BOROUGH MENTAL HOSPITALS.

COUNTIES, UNITED COUNTIES, AND BOROUGH.	WHERE SITUATE.	MEDICAL SUPERINTENDENTS.	CLERKS TO COMMITTEES OF VISITORS.
Beds, Herts, and Hunts	Arlesey, Beds	Laurence O. Fuller, L.R.C.P.	F. N. Butler, St. Neots.
Berks, Reading C.B., Newbury B., and New Windsor B.	Moulstord, Wallingford	W. W. Read, M.D.	J. T. Morland, Bath Street, Abingdon.
Brecon, Radnor, and Montgomery	Talgarth, Breconshire	P. Drummond, M.B.	A. J. Astbury, The Mental Hospital.
Bucks	Stone, Aylesbury	Hugh Kerr, M.D.	G. R. Crouch, County Hall, Aylesbury.
Camba., Isle of Ely, and Cambridge B.	Fulbourn, Cambridge	H. T. Jones, M.B., D.P.M.	W. M. Francis, 10, Peas Hill, Cambridge.
Carmarthen, Cardigan and Pembroke	Carmarthen	S. Davies, M.B., D.P.M.	W. J. Wallis-Jones, 34, Quay Street, Carmarthen.
Chester C., Birkenhead C.B., Stockport C.B. (part), and Wallasey C.B.	Upton, Chester	G. H. Grills, M.D.	H. Potts, 21, King Street, Chester.
Corwall	Parkside, Macclesfield	H. D. Cormac, M.B., D.P.M.	G. W. Wain, 43, Church Side, Macclesfield.
Cumberland, Westmorland and Carlisle C.B.	Bodmin	W. G. Rivers, M.B.	M. F. Eadyean, Mount Folly, Bodmin.
Denbigh, Anglesea, Carnarvon, Flint, and Merioneth C.	Carlisle	J. T. H. Madill, M.B., F.R.F.F.S., D.P.M.	C. W. A. Hodgson, The Courts, Carlisle.
Derby C.	Denbigh	F. G. Jones, M.D.	W. Barker, M.B.E., The Mental Hospital.
Devon	Mickleover, Derby	E. L. Hopkins, M.C., L.R.C.P., D.P.M.	H. W. Skinner, County Offices, St. Mary's Gate, Derby.
Dorset	Exminster	R. Eager, O.B.E., M.D.	B. S. Miller, The Castle, Exeter.
Durham C. and Darlington C.B.	Dorchester	P. W. P. Bedford, M.D., D.P.M.	P. H. Morton, 51, High West Street, Dorchester.
Essex and Colchester B.	Winterton, Stockton on Tees	G. S. Wilson, M.B., D.P.M.	H. Jevons, Shire Hall, Durham.
"	Brentwood	W. G. Masefield, L.R.C.P., D.P.M.	H. H. Gepp, 66, Duke Street, Chelmsford.
"	Severalls, Mile End, Colchester	R. C. Turnbull, M.D.	ditto
Glamorgan	Bridgend	D. Finlay, M.D.	W. G. Jenkins, Glamorgan County Hall, Cardiff.
Gloucester C. and Gloucester C.B.	Gloucester	F. C. Logan, M.B.	E. B. Key, The Mental Hospital.
Hants, Bournemouth C.B. and Southampton C.B.	Knowle, Fareham	J. L. Jackson, M.B.	Lt.-Col. J. R. Wyatt, O.B.E., The Mental Hospital.
"	Park Prewett, Basingstoke	V. L. Connolly, M.C., M.B., D.P.M.	H. Spooner, The Mental Hospital.

Hereford C. and Hereford B.	...	Burghill, Hereford	G. W. T. H. Fleming, L.R.C.P., D.P.M.	F. Goldingay, The Mental Hospital.
Herts	...	Hill End, St. Albans	W. J. T. Kimber, L.R.C.P., D.P.M.	P. E. Longmore, Clerk of the Peace, Hertford.
Kent and Gravesend B.	...	Barming Heath, Maidstone	A. C. Hancock, M.C., M.B., D.P.M.	H. J. Bracher, † 44, Earl Street, Maidstone.
"	...	Chartham, Canterbury	Lt.-Col. M. A. Collins, O.B.E., M.D.	J. G. Pembroke, † Burgate Street, Canterbury.
"	...	Lancaster Moor	R. P. Sephton, L.R.C.P.	Allan Sewart, 49, North Road, Lancaster.
Lancaster C., all the County Boroughs and Stockport C.B. (part).	...	Rainhill, Lancs.	E. F. Reeve, M.B.	T. Garner, 49, Corporation Street, St. Helens.
"	...	Prestwich, Manchester	D. Blair, M.D.	Sir Geo. Etherton, † County Offices, Preston.
"	...	Whittingham, Preston	A. R. Grant, M.D.	L. Cotman, 8, Lune Street, Preston.
"	...	Winwick, Warrington	F. M. Rodgers, O.B.E., M.D., D.P.H.	P. I. Dutton, M.B.E., The Mental Hospital.
"	...	Narborough, Leicester	K. K. Drury, M.C., M.D.	W. J. Freer, 10, New Street, Leicester.
Leicester C. and Rutland	...	Bracebridge, Lincoln	J. Macarthur, L.R.C.P., D.P.M.	H. E. Page, Bank Street, Lincoln.
Lincoln (Lindsey and Holland), Grimsby C.B. and Lincoln C.B.	...	Rauceby, Sleaford	N. K. Henderson, M.B., D.P.M., LL.B.	W. T. Phipps, County Offices, Sleaford.
Lincoln (Kesteven), Soke of Peterborough, and Grantham B.	...	Banstead Downs, Sutton	A. A. W. Petrie, M.D., F.R.C.P., F.R.C.S.E., D.P.M.	R. H. Curtis, Chief Officer, Mental Hospitals Dept., The County Hall, Westminster Bridge, S.E.1.
London C.	...	Bexley, Kent	Geoffrey Clarke, M.D.	Ditto
"	...	Cane Hill, Coulsdon, Surrey	G. A. Lilly, M.C., M.D., D.P.M.	Ditto
"	...	Claybury, Woodford Bridge, Woodford Green.	Guy F. Barham, M.D.	Ditto
"	...	Colney Hatch, New Southgate, N.11	John Brander, M.D., M.R.C.P., D.P.M.	Ditto
"	...	Ewell, Epsom	L. H. Wootton, M.C., M.B., D.P.M.	Ditto
"	...	Hanwell, Southall, Middlesex	A. W. Daniel, M.D.	Ditto
"	...	Horton, Epsom	W. D. Nicol, M.B., M.R.C.P., D.P.M.	Ditto
"	...	Long Grove, Epsom	D. Ogilvy, M.D.	Ditto
"	...	West Park, Epsom	N. Roberts, O.B.E., M.D., D.P.M.	Ditto
Middlesex	...	Springfield, Beechcroft Road, Tooting, S.W.17	Reginald Worth, O.B.E., M.B.	H. S. Freeman, † Clarence Street, Staines.
"	...	Napsbury, St. Albans	A. O'Neill, O.B.E., L.R.C.P.	E. S. W. Hart, † Guildhall, Westminster, S.W.1.
Monmouth	...	Abergavenny	N. R. Phillips, M.D.	A. F. T. Stewart, The Mental Hospital.
Norfolk	...	Thorpe, Norwich	O. G. Connell, M.C., L.R.C.P.	J. Middleton, M.B.E., The Mental Hospital.
Northampton C.	...	Berrywood, Northampton	F. J. Stuart, O.B.E., L.R.C.P.	Major C. A. Markham, †, Guildhall Rd., Northampton
Northumberland and Tynemouth C.B.	...	Cottingham, Morpeth	G. R. East, M.D.	Henry D. Irwin, 10, Ellison Place, Newcastle-upon-Tyne.
Notts C.	...	Radcliffe-on-Trent, Nottingham	H. C. Waldo, L.R.C.P.	A. V. Simpson, The Mental Hospital.

† Clerks to the respective Sub-Committees. Clerk to the Kent Mental Hospitals Committee: H. J. Bracher. § Clerks to the respective Sub-Committees. Clerk to the Middlesex Mental Hospitals Committee: H. S. Freeman.

‡ Also Clerk to the Lancashire Mental Hospitals Board.

* Clerks to the respective Committees. Clerk to the Hampshire Joint Committee: F. V. Barber, The Castle, Winchester.

COUNTY AND BOROUGH MENTAL HOSPITALS—continued

COUNTIES, UNITED COUNTIES, AND BOROUGH.	WHERE SITUATE.	MEDICAL SUPERINTENDENTS.	CLERKS TO COMMITTEES OF VISITORS.
Oxford C. and Oxford C.B.	Littlemore, Oxford	T. Saxty Good, O.B.E., L.R.C.P.	F. G. Scott, County Hall, Oxford.
Salop, Shrewsbury B., and Wenlock B.	Bicton, Shrewsbury	W. S. Hughes, M.B.	W. L. Edge, Shirehall, Shrewsbury.
Somerset and Bath C.B.	Wells	J. McGarvey, M.B., D.P.M.	J. H. Coates, * The Mental Hospital.
"	Cotford, Norton Fitzwarren,	H. T. S. Aveline, M.D.	A. W. Caley, * The Mental Hospital.
"	Taunton	B. H. Shaw, M.D.	H. L. Underwood, † County Buildings, Stafford.
Stafford C., and all the County Boroughs	Stafford	W. Reid, M.B.	Ditto
"	Burnwood, Lichfield	W. F. Menzies, M.D., F.R.C.P.	Ditto
"	Cheildleton, Leek	Lt.-Col. W. B. Keith, M.C., M.D.	C. Oakes, County Hall, Ipswich.
Suffolk (East and West)	Melton, Woodbridge	James A. Lowry, M.D.	D. Aukland, County Hall, Kingston-on-Thames.
Surrey and Guildford B.	Brookwood, Woking	P. C. Coombes, L.R.C.P.	Ditto
Surrey	Netherne, Coulsdon, Surrey	F. R. P. Taylor, M.D.	Harold M. Blaker, 211, High Street, Lewes.
Sussex (East)	Hellingly, Sussex	C. G. Ainsworth, M.B., LL.B.	E. H. Blaker, 9, West Pallant, Chichester.
" (West)	Chichester	A. T. W. Forrester, M.D.	H. W. Blenkinsop, 1, New Street, Warwick.
Warwick C., Coventry C.B., and Warwick B.	Hatton, Warwick	C. W. S. Davies-Jones, M.B.	R. S. Curry, The Mental Hospital.
Wight, Isle of	Whitecroft, Newport, I. of W.	S. J. Cole, M.D.	G. W. Jackson, Devizes.
Wilts	Devizes	H. F. Fenton, M.B.	J. L. Wood, Bank Buildings, Cross, Worcester.
Worcester C., Dudley C.B., and Worcester C.B.	Powick, Worcester	A. H. Firth, M.D.	C. H. Bird, Shirehall, Worcester.
Worcester C.	Barnsley Hall, near Broms- grove	J. I. Russell, M.B., F.R.F.P.S., D.P.M.	Major H. H. Dryland, M.B.E., The Mental Hospital.
York, N. Riding	Clifton, York	S. Edgerley, M.D.	G. L. Banner, A.S.A.A., Clerk to W.R. Mental Hospitals' Board, Wakefield.
"	Menston, Leeds	W. J. N. Vincent, C.B.E., M.B.	Ditto
"	Wadsley, Sheffield	J. S. Bolton, M.D., D.Sc., F.R.C.P	Ditto
"	Wakefield	C. W. Ewing, L.R.C.P., D.P.M.	Ditto
"	Storthes Hall, Kirkburton,	J. R. Gilmour, M.B., F.R.C.P.E.	Ditto
"	Huddersfield.	T. M. Davie, M.C., M.D., D.P.M.	Sir J. C. McGrath, County Hall, Wakefield.
"	§Scalebor Park, Burley-in- Wharfedale.	Beverley	J. R. Procter, County Hall, Beverley.
"	Beverley	C. W. Forsyth, M.D.	F. H. C. Wiltshire, Council House, Birmingham.
BOROUGH.	Winson Green, Birmingham	T. C. Graves, M.D., F.R.C.S.†	Ditto
Birmingham	Rubery Hill, near Birming- ham		

Brighton ...	...	...	...	Jas. H. Rothwell, C.B.E., Town Hall, Brighton.
Bristol ...	...	...	...	J. Green, The Council House, Bristol.
Canterbury ...	...	...	...	G. W. Marks, Town Hall, Canterbury.
Cardiff ...	...	...	...	D. K. Rees, The City Hall, Cardiff.
Croydon ...	...	...	...	J. M. Newnham, Town Hall, Croydon.
Derby ...	...	...	...	G. T. Lee, Town Hall, Derby.
Exeter ...	...	...	...	C. J. Newman, Town Clerk's Office, Exeter.
Gateshead ...	...	...	...	J. W. Porter, Town Hall, Gateshead.
Hull ...	...	...	...	J. R. H. Roberts, Guildhall, Hull.
Ipswich ...	...	...	...	A. Moffat, Town Hall, Ipswich.
Leicester ...	...	...	...	H. A. Pritchard, Town Hall, Leicester.
London (City of) ...	...	...	...	L. T. Feldon, 5, Church Passage, Guildhall, E.C. 2.
Middlesbrough ...	...	...	...	Preston Kitchen, Town Clerk's Office, Middlesbrough.
Newcastle-upon-Tyne ...	...	...	...	A. M. Oliver, Town Clerk's Office, Newcastle-upon-Tyne.
Newport ...	...	...	...	O. T. Morgan, Town Clerk's Office, Newport, Mon.
Norwich ...	...	...	...	Noel B. Rudd, Guildhall, Norwich.
Nottingham ...	...	...	...	W. J. Board, Guildhall, Nottingham.
Plymouth ...	...	...	...	R. J. Fittall, Town Clerk's Office, Plymouth.
Portsmouth ...	...	...	...	F. J. Sparks, Guildhall, Portsmouth.
Sunderland ...	...	...	...	H. Craven, Town Hall, Sunderland.
Swansea ...	...	...	...	H. L. Lang-Coath, The Guildhall, Swansea.
West Ham ...	...	...	...	C. E. Cranfield, Town Hall, West Ham, E.15.
York ...	...	...	...	P. J. Spalding, Guildhall, York.
Haywards Heath, Sussex	...	...	...	G. H. Harper Smith, M.D.
Fishponds, Bristol	...	...	...	E. B. C. White, L.R.C.P.
St. Martin's Hill, Canterbury.	...	...	...	E. F. Sall, L.R.C.P.
Whitechurch, Glamorgan	...	...	...	P. K. McCowan, M.D., M.R.C.P., D.P.M.
Warlingham, Whyteleafe, Surrey	...	...	...	H. M. Berncastle, L.R.C.P.
Rowditch, Derby	...	...	...	John Bain, M.B.
Digbys, Topsham	...	...	...	D. McK. Reid, M.D., F.R.F.P.S.
Stannington, Newcastle-upon-Tyne.	...	...	...	H. E. Brown, M.B., D.F.M.
De la Pole, Willerby, Hull	...	...	...	J. S. Anderson, L.R.C.P.
Ipswich	...	...	...	P. Banbury, L.R.C.P., D.P.M.
Humberstone, Leicester	...	...	...	Lt.-Col. J. F. Dixon, M.D.
Stone, Dartford	...	...	...	W. Robinson, M.D., D.P.M.
Cleveland, Middlesbrough	...	...	...	H. G. Drake-Brockman, L.R.C.P.
Gosforth, Newcastle-upon-Tyne.	...	...	...	H. D. MacPhail, O.B.E., M.D.
Caerleon, Mon.	...	...	...	M. R. Mackay, M.C., M.B.
Hellesdon, Norwich	...	...	...	David Rice, M.D., D.P.H.
Mapperley Hill, Nottingham.	...	...	...	G. L. Brunton, M.D.
Blackadon, Ivybridge	...	...	...	E. G. T. Poynder, L.R.C.P., D.P.M.
Milton, Portsmouth	...	...	...	T. Beaton, O.B.E., M.D., F.R.C.P.
Ryhope, Co. Durham	...	...	...	M. A. Archdale, M.B., D.F.M.
Cefn Coed, Swansea	...	...	...	J. S. I. Skottowe, M.D., D.P.M.
Goodmayes, Ilford, Essex	...	...	...	J. H. Cuthbert, M.B., D.P.M.
Fulford, York	...	...	...	R. A. Hooper, M.B.

* Clerks to the respective Sub-Committees. Clerk to Somerset and Bath Mental Hospitals Committee : A. W. Caley.

† Also Clerk to the Staffordshire Mental Hospitals Board.

‡ Also Medical Director of the Birmingham Mental Hospital, which comprises Winson Green Division and Rubery Hill with Hollymoor Division.

§ For private patients only.

HOSPITALS.

COUNTY.	REGISTERED HOSPITALS.	MEDICAL SUPERINTENDENTS.
Chester	Manchester Royal Hospital, Cheadle.	J. A. C. Roy, M.B.
Devon	Wonford House, Exeter ...	H. W. Eddison, M.D., D.P.M.
Gloucester	Barnwood House, Gloucester ...	A. A. D. Townsend, M.D.
Kent	*Bethlem Royal Hospital, Eden Park, Beckenham.	J. G. Porter Phillips, M.D., F.R.C.P.
Lincoln	The Lawn, Lincoln	Myra Mackenzie, M.B.
Norfolk	Bethel Hospital, Norwich ...	S. J. Fielding, M.B.
Northampton	St. Andrew's Hospital, Northampton.	D. F. Rambaut, M.D.
Notts	The Coppice, Nottingham ...	D. Hunter, M.B.
Oxford	The Warneford, Headington Hill, Oxford.	A. W. Neill, M.D.
Stafford	Coton Hill Hospital, Stafford	R. Macdonald, O.B.E., M.D., D.P.M.
Surrey	Holloway Sanatorium, St. Ann's Heath, Virginia Water.	H. Devine, O.B.E., M.D., F.R.C.P.
York City (N.R.)	Bootham Park, York	G. R. Jeffrey, M.D., F.R.C.P.E.
.. .. (E.R.)	The Retreat, York	Neil Macleod, M.D., D.P.M.
MILITARY AND NAVAL HOSPITALS :		
Hants	Royal Military Hospital, Netley, Southampton.	Maj. H. Gall, L.R.C.P.
Norfolk	Royal Naval Hospital, Yarmouth.	Surgeon-Commander F. L. H. MacDowel, R.N., L.R.C.P. & S.
CRIMINAL ASYLUM :		
Berks	State Criminal Asylum, Broadmoor, Crowthorne.	H. P. Foulerton, L.R.C.P., D.P.H.

* Registered for 109 males and 141 females.

METROPOLITAN LICENSED HOUSES—continued.

HOUSES.		Number of Patients for which Licensed.			TO WHOM LICENSED.
		M.	F.	Total.	
Females only :					
Clapham Park, S.W. 4	...	—	12	12	J. A. Thwaites, Miss L. E. Thwaites, Miss L. M. Thwaites, and Mrs. L. A. Sparkes.
Hayes, Uxbridge	...	—	14	14	H. F. Stilwell, L.R.C.P., and R. J. Stilwell, L.R.C.P.
"	...	—	19	19	R. J. Stilwell, L.R.C.P., Miss R. Cheek, and G. W. D. James, M.C., M.D., D.P.M.
Hendon, N.W.	...	—	14	14	H. R. S. Walford, L.R.C.P., Mrs. Walford, A. C. Loader and E. Hiscocks.
Streatham Hill, S.W. 2	...	—	30	30	E. W. White, C.B.E., M.B., M.R.C.P., Mrs. H. White, and J. H. Earls, M.D.
Sydenham, S.E. 26	...	—	30	30	Capt. F. H. Little, Miss E. B. Brodie, and Mrs. M. A. H. Little.
Forest Hill, S.E. 23	...	—	10	10	W. L. Bailey and Mrs. L. M. Robinson.

g. Limited to quiet and harmless cases.

* Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Female Temporary Patients.

PROVINCIAL LICENSED HOUSES.

COUNTY.	HOUSES.	TO WHOM LICENSED.	Number of Patients for which Licensed.		CLERK TO VISITORS.	MEDICAL VISITORS.
			M.	F. T.		
Beds [Bedford Borough]	Bishopstone House, Bedford	Miss B. C. Peele, Mrs. M. Rogers, Miss M. M. Holder, Miss A. George, Mrs. D. M. Sutton, and M. C. de C. Peele.	—	10	G. J. M. Whyley, Bedford.	H. M. Coombs, M.B.
Beds ...	*†Springfield House, Bedford	Mrs. M. L. Bower, C. W. Bower, L.M.S.A., Mrs. M. A. E. Bower, and Miss G. E. P. Hookey.	Not more than 24	48	J. B. Graham, ditto	E. C. Sharpin, L.R.C.P.
Derby ...	*†Wye House, Buxton ...	W. W. Horton, M.D., and Miss J. M. Dickson.	22	44	W. B. Bunting, Chapel-en-le-Frith.	W. Shipton, M.D.
Devon ...	*Court Hall, Kenton, Exeter	Miss B. M. Mules, M.D., and Miss A. S. Mules, L.R.C.P.	—	8	F. A. Pearce, Exeter	L. P. Black, M.B., D.P.H.
" ...	*Plympton House, Plympton.	J. C. Nixon, M.B.	18	44	R. B. Johns, Plymouth	E. L. Fox, M.D.
Durham ...	*†Middleton Hall, Middleton St. George.	R. H. O. Garbutt, L.R.C.P., T. C. Barkas, O.B.E., M.B., and J. W. Astley-Cooper, L.R.C.P.	21	65	G.H. Watson, Darlington	T. Beattie, M.D., F.R.C.P.
Essex ...	*Littleton Hall, Shenfield, Brentwood.	Miss M. G. E. Wilson, H. G. L. Haynes, L.R.C.P., and Mrs. M. Haynes.	—	25	H. F. Bawtree, Witham	R. W. Quennell, O.B.E., L.R.C.P.
Gloucester ...	*†Northwoods, Winterbourne Bristol.	J. D. Thomas, M.B., H. J. Cates, M.D., and Mrs. R. Cates.	Not more than 35	50	L. M. Harris, 65, Stokes Croft, Bristol.	{ J.R. Charles, M.D., F.R.C.P., and P. L. Moore, M.B.
" ...	*The Retreat, Fairford	A. C. King-Turner, M.B., C. J. King-Turner, L.R.C.P., and Mrs. E. Pearce.	—	(a) 50	Robert W. Ellett, Cirencester.	D.G. Cossam, M.B.

(a) Not more than 25 males.

* Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Female Temporary Patients.

† Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Male Temporary Patients.

PROVINCIAL LICENSED HOUSES—continued.

COUNTY.	HOUSES.	TO WHOM LICENSED.	Number of Patients for which Licensed.			CLERK TO VISITORS.	MEDICAL VISITORS.
			M.	F.	T.		
Kent ...	*†Malling Place, West Malling, Kent.	G. H. Adam, L.R.C.P., and H. Gray, L.R.C.P., and Mrs. Irene Adam.	18	21	(a) 39	C. E. Warner, Tonbridge	{ W. M. Ramsden, M.D. Hy. A. Andrews, L.R.C.P.
Lancaster ...	*†Haydock Lodge, Ashton, Newton-le-Willows.	C. T. Street, L.R.C.P., Mrs. Mabel R. Street, J. C. Wootton, M.C., L.R.C.P., Mrs. M. Wootton, and Mrs. E. Mould.	Not more than 80	90	150	H. Hatton, Warrington	H. Langdale, M.D.
" [Liverpool City].	†Tue Brook Villa, Liverpool	J. M. Moyes, M.B., and Mrs. A. E. B. Moyes.	Not more than 38	26	52	C. T. Barton, Clerk to Justices, Liverpool.	{ R. I. Richardson, M.B. T. Clarke, M.D.
Lancaster ...	*Shaftesbury House, Formby, Liverpool.	Mrs. F. W. Gill, Mrs. E. M. Gill, and John W. Jones.	Not more than 10	40	40	G. W. Swift, 74, Hanover St., Liverpool.	H. Langdale, M.D.
Norfolk [Norwich City].	*†Heigham Hall, Norwich	J. A. Small, M.B., and Maj. D. D. Milne.	40	75	95	} J. F. Betts, Norwich	H. J. Starling, M.D.
" ...	*The Grove, Catton Grove Road, Norwich.	Miss F. R. McLintock, and Miss H. M. McLintock.	—	(c) 21	21		
Shropshire ...	†Stretton House, Church Stretton.	J. C. Baker, M.B., S. T. H. Lane, and Miss N. B. A. Jones.	40	—	40	W. Baxter, Shirehall, Shrewsbury.	H. W. Gardner, M.B.E., M.D., F.R.C.P.

Shropshire ...	*Grove House, All Stretton	J. McClintock, L.R.C.P., Mrs. F. E. G. McClintock, Miss G. M. T. Daniell and Mrs. G. M. Lane.	—	40	40	W. Baxter, Shirehall, Shrewsbury.	H. W. Gardner, M.B.E., M.D., F.R.C.P.
"	Boreatton Park, Baschurch, near Shrewsbury.	E. H. O. Sankey, M.B., and Mrs. K. M. O. Miller.	12	18	30	Ditto	Ditto.
Somerset ...	*Ballbrook House, Bath-easton.	Col. H. A. Bray, C.B., C.M.G., L.R.C.P., E. M. Wright, and S. J. Gillilan, O.B.E., M.B.	Not more than 11	36	44	C. E. Newman, 14, Boulevard, Weston-super-Mare.	R. E. Moorhead, L.R.C.P., J. R. Charles, M.D., J. Wallace, O.B.E., M.B., John Allen, M.B., and W. H. Maidlow, M.D.
"	**Brislington House, Bristol	Mrs. A. Fox, J. M. Rutherford, M.B., and F. E. Fox, L.R.C.P.	44	62	106	S. Young, Petty Sessional Court House, Bristol.	Annie F. M. Cornall, F.R.C.S.I., W. H. Cory, M.R.C.S., and Colston Wintle, L.R.C.P.
Stafford ...	Ashwood House, Kingswinford, Dudley.	H. G. Peacock, L.R.C.P., and J. F. G. Pietersen, L.R.C.P.	11	20	31	H. L. Underwood, County Buildings, Stafford.	Ditto.
"	Moat House, Tamworth	W. Lawson, M.B., and Miss D. E. Bagnall.	—	16	16	Ditto	Ditto.
Surrey ...	The Silver Birches, Church-street, Epsom. ...	Miss M. L. Oxford and E. G. C. Daniel, M.B.	—	14	14	D. Aukland, County Hall, Kingston-on-T.	H. Thwaites, L.R.C.P.
Sussex, East ...	*†Ticehurst House ...	C. F. F. McDowall, M.D., H. A. H. Newington, D. H. Cooper and H. McMahon.	41	51	92	H. J. T. McIlveen, County Hall, Lewes.	J. W. McK. Nicholl, M.D.
"	*St. George's Retreat, Burgess Hill.	Miss Ward, Miss McEvoy, Miss Keane, and Miss Collins.	—	75	75	Ditto	Ditto.
"	Periteau House, Winchelsea, Sussex.	H. Baird, M.D., and Mrs. I. M. Baird	—	5	5	Ditto	Ditto.
" [Hastings Borough]	Ashbrook Hall, Hollington	Charles E. H. Somerset.	—	6	6	F. G. Langham, 44A, Robertson-street, Hastings.	E. M. Barker, M.B.
Warwick ...	*Glendossill, Henley-in-Arden.	W. Agar, L.R.C.P., Mrs. Mary D. Agar and Miss E. M. McKay.	12	33	40	A. C. Burrows, 1, New Street, Warwick.	W. R. W. Asplen, M.D.
Wilts [New Sarum City].	*†The Old Manor, Salisbury	Sir Cecil H. E. Chubb, Bart., LL.B., S. E. Martin, M.B., and P. W. Carruthers, M.B.	—	—	672	A. C. Jonas, Salisbury...	E. T. Fison, O.B.E., M.D., F.R.C.S., and R. C. Monnington, M.D.

(b) Of whom 20 may be rate-aided patients.

(a) Proportion of sexes may be varied.

(c) Of whom 25 may be rate-aided patients.

g. Limited to quiet and harmless cases.

* Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Female Temporary Patients.

† Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Male Temporary Patients.

PROVINCIAL LICENSED HOUSES—continued.

COUNTY	HOUSES.	TO WHOM LICENSED.	Number of Patients for which Licensed.			CLERK TO VISITORS.	MEDICAL VISITORS.
			M.	F.	T.		
Wilts	*†Laverstock House, Salisbury.	J. R. Benson, F.R.C.S., Mrs. Enid Benson, H. Hill, M.D., and Miss E. Alexander.	Not more than 50	50	70	W. L. Bown, Trowbridge	A. W. K. Straton, L.R.C.P.
"	*†Fiddington House, Market Lavington, Devizes.	J. R. Benson, F.R.C.S., Mrs. May Benson, Lt.-Col. C. B. Benson, D.S.O., and the Rev. E. Benson.	Not more than 25	25	30	Ditto	G. S. A. Waylen, L.R.C.P.
"	*Kingsdown House, Box ...	H. C. MacBryan, L.R.C.P., and Mrs. A. K. MacBryan.	Not more than 13	43	43	Ditto	A. D. Hamilton, M.D.
York, W.R.	Greta Bank, Burton-in-Lonsdale, Carnforth.	Miss Sarah J. Perkin, J. C. Wootton, M.C., L.R.C.P., Mrs. Edith Mould, and C. T. Street, L.R.C.P.	10 or 10	10	10	W. H. Coles, Wakefield	L. T. Wells, L.R.C.P.
"	*The Grange, Kimbworth, Rotherham.	G. E. Mould, L.R.C.P., and Mrs. B. L. Mould.	—	20	20	C. L. des Forges, Rotherham.	W. Barr, M.D.
York City ...	*The Pleasaunce, Heworth, York.	L. D. H. Baugh, M.B., and Mrs. J. S. Baugh, M.B.	Not more than 9	17	22	H. V. Scott, York ...	J. Acomb, M.D.

* Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Female Temporary Patients.

† Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Male Temporary Patients.

APPENDIX C.
INSTITUTION PROVIDED BY A LOCAL AUTHORITY FOR VOLUNTARY PATIENTS ONLY.

Name of Institution.	Address.	Medical Superintendent.	Owning Authority.
Mandsley Hospital	Denmark Hill, London, S.E.5	E. Mapother, M.D., F.R.C.S., F.R.C.P.	London County Council.

APPENDIX D.
HOSPITALS APPROVED FOR THE RECEPTION OF VOLUNTARY AND TEMPORARY PATIENTS.

Name of Hospital.	Address.	Number of Patients for which approved.			Person in Charge.
		M.	F.	T.	
Hull Royal Infirmary*	Hull.	—	—	—	J. S. Anderson, L.R.C.P.
St. John's Hospital	Morden Hill, Lewisham, S.E.13.	1	1	2	J. C. Gilbert.

APPENDIX E.
NURSING HOMES APPROVED FOR THE RECEPTION OF VOLUNTARY AND TEMPORARY PATIENTS.

Name of Nursing Home.	Address.	Number of Patients for which approved.			Name of Proprietor.
		M.	F.	T.	
Silverton Lodge	118, Church Road, Upper Norwood, S.E.19.	—	4	4	Miss Margaret B. Macleod.
Riverhead House	Sevenoaks, Kent	—	8	8	Mrs. M. L. Macartney.
Tykeford Abbey	Newport Pagnell, Bucks.	—	6	6	D. E. M. Douglas-Morris, L.M.S.S.A.
Dorset House	Clifton Down, Bristol.	—	20	20	Miss E. Casson, M.D., D.P.M.
Angle House	Beauchamp Road, Molesey.	—	—	17	H. Lloyd Driver, L.R.C.P.
Mount Pleasant	Clevedon, Somerset.	—	3	3*	Mrs. N. C. Whitfield.
The Hall	Harrow Weald.	—	—	2	E. Lincoln Williams, L.R.C.P.
Boughton Hall	Chester.	—	6	6	C. J. Tisdall, M.D.
Arthington	Barton Road, Torquay.	—	—	8	Messrs. Arthington, Ltd.
The Elms	93, Belmont Hill, Lewisham, S.E. 13.	—	—	4	J. J. Reidy, M.D.

* Voluntary only.

APPENDIX F.

STATE and CERTIFIED INSTITUTIONS, CERTIFIED HOUSES, and APPROVED HOMES under the MENTAL DEFICIENCY ACT, 1913, with the Names of Managers or Owners, Clerks to Visitors, and the Number and Class of Patients.

(Corrected to August, 1933.)

STATE INSTITUTION.

COUNTY or COUNTY BOROUGH within which the Institution is situate	Name and Address of Institution.	Names of Managers or Owners.	Name of Superintendent.	Number and Class of Defectives.
Nottingham ...	Rampton, Retford ...	The Board of Control, Caxton House West, London, S.W.1.	F. E. E. Schneider, M.D., D.P.M.	652 males and 499 females of dangerous or violent propensities.
Lancashire ...	<i>Branch:</i> Moss Side, Maghull, Liverpool.	Do. do. do.	C. H. G. Gostwyck, M.B.	150 males and 156 females of dangerous or violent propensities.

CERTIFIED INSTITUTIONS.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Bedfordshire ...	Bromham House, Bromham, Bedford	Beds. and Northants Joint Board.	J. B. Graham, Shire Hall, Bedford.	24 high grade adult males.
Berkshire ...	Cumnor Rise, Cumnor	The Oxford Branch of the National Association for Promoting the Welfare of the Feeble-minded. Hon. Sec. of Branch:—Hon. P. Bruce, 4, Wellington Place, St. Giles, Oxford. Middlesex County Council.	H. J. C. Neobard, Shire Hall, Reading. Do. do.	34 feeble-minded females, not more than 5 of whom are to be private patients. The age of admission is from 14 years. Epileptics and fallen women not taken. Poor Law cases received. 102 adult females and 14 juveniles.
Bucks ...	Craufurd Home, Maidenhead The Manor House, Aylesbury	The Bucks M.D. Committee.	H. Fisher, County Hall, Aylesbury.	99 patients.
Carmarthen ...	Pantglas Hall, Llanfynydd Road, Carmarthen.	The West Wales Joint Board ...	J. W. Nicholas, County Offices, Carmarthen.	117 females of 7 years of age and upwards. Trainable cases only.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Cheshire ...	Ashton House (Seaside Laundry Home), Park-gate, Chester. Mary Dendy Home, Sandlebridge, Alderley Edge.*	Committee of Management ...	E. W. T. Gasking, Birkenhead.	40 high-grade feeble-minded girls. Admission over 14 years of age.
Cornwall...	Cranage Hall, Holmes Chapel. Convent of the Good Shepherd, St. Anne's, Saltash.	Incorporated Lancs and Cheshire Society for the Permanent Care of the Feeble-minded. Sec. :- E. M. Richards, 72, Bridge Street, Manchester. Cheshire Joint Board ...	G. C. Springleour, Northgate Street, Chester. Do. do.	425 of either sex. <i>Certified by Board of Education for 115 boys and 45 girls.</i> 62 adult high-grade females.
Cumberland (Carlisle C.B.)	Durran Hill House, Carlisle.	Committee of Management ...	F. A. H. Sheers, Truro.	10 Roman Catholic female adults. High or medium grade.
Derby ...	Dovenby Hall Colony, Cocker-mouth. Aston Hall, Aston-upon-Trent.	Westminster Diocesan Education Fund ... Sec. :- Archbishop's House, Victoria Street, London, S.W.1. Cumberland, Westmorland & Carlisle Joint Committee for the Mentally Defective. Nottingham City Council ...	F. G. Webster, 15, Fisher Street, Carlisle. C. W. A. Hodgson, The Courts, Carlisle. W. B. Bunting, Chapel-en-le-Frith. Do. do.	65 feeble-minded Roman Catholic females, aged 16 years and over. Criminals and fallen women not accepted. Poor Law cases received. 120 males and 65 females. 108 females. 400 females.
Derby ...	Whittington Hall (Midland Counties Institution), Chesterfield. Thornhill, Trowels Lane, Derby.	The Incorporation of National Institutions for Persons requiring Care and Control. Mrs. Burden, The Warden, 14, Howick Place, Victoria Street, London, S.W.1. Derby Borough Corporation ...	W. R. H. Whiston, Idridgehay, Derby. J. I. Pengelly, The Court House, Exeter.	39 females. Not more than 33 able-bodied imbeciles under 16 and not more than 6 feeble-minded adults. 162 feeble-minded females. 84 at Devon and Exeter Home, 21 at The Chantry, and 57 (40 cot and chair cases of either sex and 17 high or medium grade females over 16 years of age) at the Home of the Holy Innocents.
Devon ... (Exeter C.B.)	The Devon and Exeter Home of the Good Shepherd, Holloway Street, Exeter; with ancillary premises: The Chantry, Exeter; and	Committee of Management ...		

* Certified as a Special School by Board of Education.

CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Devon (Exeter C.B.) (Plymouth C.B.)	The Home of the Holy Innocents, Franklyn, St. Thomas, Exeter. Hampton House, Ebrington St., Plymouth. Stoke Lyne, Withcombe, Exmouth.	The Committee of the Plymouth, Devonport and Stonehouse Penitentiary and Home. County Council of Devon Committee of Management	J. Bone, Guildhall, Plymouth. F. A. Pearce, 14, Castle Street, Exeter. Do.	20 female adults. 47 males and 5 females. 420 males and 241 females. <i>Certified by Board of Education for 100 patients.</i>
Durham	Monkton Hall Home for Lads, Monkton, Jarrow-on-Tyne.	The Committee of the North-Eastern Association for the Care of the Feeble-minded. Sec. :—J. Stewart, 90, Pilgrim Street, Newcastle-upon-Tyne. Committee of Management	G. H. Watson, Darlington. Do. Do.	79 male feeble-minded cases. Age on admission, 16 to 20 years. 8 females. Feeble-minded and moral, under the age of 18 years at time of admission. 400 males and females, all classes.
Essex	St. Catherine's Home, Allergate, Durham. Shotley Bridge Colony, Shotley Bridge, Durham. Bigod's Hall, near Dunmow, Essex.*	The Newcastle-upon-Tyne Mental Deficiency Committee. Committee of Management	Do. Do. H. F. Bawtree, Witham.	6 males. Imbeciles and feeble-minded up to the age of 16 years. <i>Certified by Board of Education for 61 boys.</i>

<p>Essex—cont. ...</p>	<p>Brunswick House, Mistley.</p>	<p>The L.C.C. Mental Hospitals Committee... Chief Officer, Mental Hospitals Dept., The County Hall, Westminster Bridge, S.E. 1.</p>	<p>Do. do.</p>	<p>75 higher grade employable males, not less than 16 years of age. Reserved for London cases only.</p>
<p>The Mutual Sanatorium (New Lodge, Leon House, The Homestead and St. Keverne), Billericay.</p>	<p>The Mutual Sanatoria, Ltd. ... Sec.:—E. L. Coppin, New Lodge, Billericay.</p>	<p>Do. do.</p>	<p>Do. do.</p>	<p>54 males, excepting those who are dangerous to themselves or others, runaways, or who require physical restraint and are unsuitable for care on the "open-door" system.</p>
<p>Etloe House, Church Road, Leyton, E.10.</p>	<p><i>Corresponding Manager</i>:—The Right Rev. Mgr. W. O'Grady, St. George's, Walthamstow, E.17.</p>	<p>Do. do.</p>	<p>Do. do.</p>	<p>120 feeble-minded females, from 16 years of age and of the Roman Catholic religion. Poor Law cases received.</p>
<p>Royal Eastern Counties Institution, Colchester,*† with ancillary premises: Lexden House, Colchester; East Hill House School, Colchester; Hillsleigh, 10, East Hill, Colchester; Greenwood Schools, Halstead; Crossley House, Clacton; Bridge Home, Witham; The Retreat, Witham; Tabor House, Witham; Gt. West Hatch, Chigwell; and Littleton House School, Gorton, Cambridge.</p>	<p>Board of Directors ... (Medical Superintendent: F. D. Turner, M.B.)</p>	<p>C. W. Denton, 9, East Stockwell Street, Colchester.</p>	<p>Do. do.</p>	<p>1,320 males and females. 139 boys or girls and by Home Office for 17 girls. Main institution—558 males and females. Lexden House—65 adult females. East Hill House—60 males, of whom 4 may be cases over 16 years of age. Hillsleigh—48 boys of school age. Greenwood—90 females. Crossley House—61. Bridge Home—291 adult males. The Retreat—33 males. Tabor House—44 crippled adult males. Gt. West Hatch—59 adult females.</p>
<p>Walsham How Home, 1, Forest Rise, Walthamstow, E.17.</p>	<p>The Church Army. Hon. Secretary:—Mrs. Cannon, 57, Bryanston Street, Marble Arch, W.1.</p>	<p>A. Tabrum, Cambridge.</p>	<p>Do. do.</p>	<p>Littleton House—11 males.</p>
<p>Girls' Village Homes, Barkingside, with ancillary premises: Warlies, Upshire, Waltham Cross.</p>	<p>Dr. Barnardo's Homes National Incorporated Association</p>	<p>H. F. Bawtree, Witham.</p>	<p>Do. do.</p>	<p>45 female adults, feeble-minded and moral defectives.</p>
<p>The Colony, South Ockendon.</p>	<p>West Ham County Borough Council. ...</p>	<p>Do. do.</p>	<p>Do. do.</p>	<p>150 females, imbecile and feeble minded from 5 years of age. 65 high to medium grade adult females.</p>

* Certified as a Special School by Board of Education. † Certified as a Special Industrial School by Home Secretary.

CERTIFIED INSTITUTIONS.—continued

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Flint ...	Coed Du Hall, Cilceen, Mold ...	Denbigh M. D. Committee ...	J. Harvey-Davies, County Offices, Mold. Do. do.	53 adult and 19 juvenile females.
Glamorgan ...	Broughton Institution, Broughton, Chester. Drynma Hall, Skewen, near Neath. Hensol Castle, Pontyclun, Glam. Llwyn Eryr Training Home, Morriston, Swansea.	Flint County Council ... Glamorgan County Council (Medical Superintendent: E. Lewis, F.R.F.P. & S.G., L.R.C.P. & S.) Glamorgan County Council (Medical Superintendent: Edward Lewis, F.R.C.P.) Swansea County Borough Council ...	W. G. Jenkins, County Hall, Cardiff. Do. do. J. Lake, Central Police Buildings, Swansea.	32 active medium to low grade females over the age of 16 years, and 12 active imbeciles of each sex under the age of 16 years. 79 females. All classes within the meaning of the Act. 100 high to medium grade adult males.
(Swansea C.B.)	Brenty Certified Institution, Westbury-on-Trym, Bristol ...	Board of Management ... Hon. Sec.:—E. R. Abbott, 13, Victoria Street, London, S.W.1. (Medical Superintendent: G. R. A. de M. Rudolf, M.R.C.P., D.P.M.) The Committee of Management ...	L. M. Harris, 65, Stokes Croft, Bristol. E. T. Gardom, O.B.E., Shire Hall, Gloucester.	27 female adults. 358. All classes within the meaning of the Act, being males over the age of 18 years.
Gloucester ...	St. Mary's Home, Painswick, near Stroud. Hortham Colony, Almondsbury, Bristol Stoke Park, Bristol, with ancillary premises: Royal Victoria Home, Horfield, Bristol; Hanham Hall, Hanham; Leigh Court, Abbot's Leigh, near Bristol.	Bristol City Council. (Medical Superintendent: W. Wyatt, M.B., D.P.M.) The Incorporation of National Institutions for Persons requiring Care and Control. Mrs. Burden, The Warden, 14, Howick Place, Victoria Street, London, S.W.1. (Director of Medical Services: R. J. A. Berry, M.D., F.R.C.S., Ed.)	Do. do. L. M. Harris, 65, Stokes Croft, Bristol. Do. do.	29 female feeble-minded cases. Age on admission 14 to 25 years, and of the Church of England. Cases over the age of 25 to be received only with the previous consent of the Board. 304 of each sex. 1,680 patients, of whom not more than 730 shall be males and not more than 992 shall be females, distributed as follows:— Stoke Park Colony ... 1,138 Hanham Hall ... 240 Royal Victoria Home ... 42 Leigh Court ... 260

(Bristol C.B.)	Chasefield Laundry Home, 874, Fishponds Road, Fishponds, Bristol.	The Sub-Committee of the Bristol Preventive Mission (for the management of Chasefield). Hon. Secs.:—Miss Alice Mary Lavington and Miss Clara E. Sheppard, Stoberry Lodge, 18, Ashgrove Road, Redland, Bristol.	S. Young, Petty Sessionsal Court House, Bristol.	40 feeble-minded females. Poor Law cases received.
(Do.)	The Royal Fort Home, St. Michael's Hill, Bristol	The Committee of the Bristol Preventive Mission.	Do.	30 females. High grade adults on licence from other Certified Institutions.
Hampshire ...	Coldeast Colony, Salisbury, Southampton.	Hampshire Joint Mental Health Institutions Committee.	F. V. Barber, The Castle, Winchester.	100 males and 270 females, of whom 50 males and 50 females shall be under the age of 16 years.
(Portsmouth C.B.)	Tatchbury Mount Colony, West Totton.	Ditto.	Do.	56 male adults.
	St. Paul's House, 66, King Street, Portsea.	The Free Church Women's Council (Portsmouth and District).	B. J. Tay, The Guildhall, Portsmouth.	7 high grade female adults.
	St. Mary's Home, Alton, Hants, with ancillary premises: The Home of the Holy Rood, Worthing; Thorpe Place, Thorpe, Chertsey, Surrey;	Sisters of the Community of St. Mary the Virgin, of Wantage, Berks.	F. V. Barber, The Castle, Winchester.	45 females over the age of 16 years, who may have had illegitimate children. Poor Law cases received. Not more than 14 at the Home of the Holy Rood.
	St. Mary's Home, Halkon, Hastings;		S. Thornely, County Hall, Chichester. D. Aukland, County Hall, Kingston-on-Thames.	8 high-grade adult females.
	St. John's Hostel, 17, Grove Park, Denmark Hill, S.E.5.		F. G. Langham, Palace Chambers, White Rock, Hastings.	12 high grade females between the ages of 16 and 40 years.
	Mount Tabor, Darlington Road, Basingstoke.	The Sisters of the Transfiguration ...	John Dix, Sessions House, Newington, S.E.1. F. V. Barber, The Castle, Winchester.	6 high grade adult females. 50 feeble-minded females 16 years of age and over. Church of England cases only.

† Blind patients.

CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Herts	Hillside, Buntingford, Herts.	Westminster Diocesan Education Fund ... Sec. :—Archbishop's House, Westminster, London, S.W.1.	P. E. Longmore, Hertford.	48 males suitable to be housed and instructed with children, for whom the school is primarily intended.
	Barvin Park (St. Raphael's), Northaw, Potter's Bar. The Middlesex Colony, Harper Lane, Shenley, St. Albans. Kingsmead Schools, Ware Road, Hertford.*	The Brothers Hospitaliers of St. John of God. Middlesex County Council. Managers appointed by the Herts County Council.	Do. Do. Do.	43 feeble-minded adult males of the Roman Catholic religion. 320 males.
	St. Elizabeth's Home for Epileptics, Much Hadham.*	The Very Rev. Canon Sutcliffe, F. W. Sherwood, Esq., S. Moorat, Esq., Dr. C. H. Cockran, Miss M. M. Sutcliffe, and Mrs. F. P. Hobson. Sec. :—Archbishop's House, Westminster, S.W.1.	Do.	22. All classes. 10 adult females and 12 of an age and degree of mental defect such as would permit of their being housed and instructed with children, for whom the School is primarily intended. <i>Certified by Board of Education for 70 boys and 56 girls.</i> <i>School—3 males and 3 females.</i> <i>Certified by Board of Education for 14 boys and 42 girls.</i>
Kent	Cell Barnes Colony, St. Albans. Princess Christian's Farm Colony, Hildenboro', Kent. West View, Tenterden. Leybourne Grange, West Malling, Maidstone.	Hertfordshire County Council (Medical Superintendent : N. H. M. Burke, L.R.C.P., D.P.M.). National Association for the Feeble-minded, 72, Denison House, 296, Vauxhall Bridge Road, Westminster, S.W.1. Kent County Council. Do. Do. (Medical Superintendent: R. F. Jarrett, F.R.F.P.S.)	Do. Do. C. E. Warner, Tonbridge. E. Herrin, Tenterden. C. E. Warner, Tonbridge.	Colony—104 females. Idiots, imbeciles, and feeble-minded cases of the Roman Catholic religion. 300 male and 300 female defectives. 71 males, 68 females. 180 females. 71 adult females.

Lancashire ...	Adcote (Laundry and Training Home), Pilch Lane, Knotty Ash, Liverpool.	Adcote Committee ... Hon. Sec. :—Mrs. R. M. Weeks, The Grove, Gatacre, Liverpool.	C. T. Barton, Clerk to Justices, Liverpool.	19 high-grade feeble-minded girls; age on admission over 14 years. Roman Catholics not received.
(Liverpool C.B.)	Allerton Priory R.C. Special (M.D.) School, Woolton, Liverpool.*†	Board of Management ... Hon. Sec. :—Rev. J. Bennett, 1a, Trueman Street, Liverpool.	Do. do.	1 male and 40 females. Feeble-minded cases of a degree of mental defect such as will permit of their living in association with and being instructed or trained with the children for whom the School is primarily intended. <i>Certified by Board of Education for 110 girls, and also certified by Home Office.</i>
(Do.) ...	Calderstones, Whalley, near Blackburn, with ancillary premises: Brockhall, Langho, near Blackburn.	Lancashire Mental Hospitals Board Clerk :—Sir George Etherton. County Offices, Preston. (Medical Superintendent :—F. A. Gill, M.D., C.M.)	L. Cotman, 8, Lune Street, Preston.	2,726. 1,110 males and 1,218 females at Calderstones and not more than 82 males and 316 females at Brookhall. All classes, including epileptics, within the meaning of the Act.
(Do.) ...	Dovecot (Horticultural School), Knotty Ash, Liverpool.*†	Dovecot Committee ... Hon. Sec. :—Rev. F. A. H. Score, West morland Road, Huyton, near Liverpool.	C. T. Barton, Clerk to Justices, Liverpool.	30 feeble-minded females; 26 over the age of 16 and 4 of an age and of a degree of mental defect such as would permit of their being housed and instructed with the children for whom the school is primarily intended. <i>Certified by Board of Education for 38 girls and by Home Office for 64 girls.</i>
(Do.) ...	Gillibrand Hall, Chorley	Committee of Management ... Hon. Sec. :—Rev. J. Bennett, 1a, Trueman Street, Liverpool.	L. Cotman, 8, Lune Street, Preston.	40 female feeble-minded cases. Principally adults with a limited number of children under 16. 49 adult males.
(Do.) ...	Lisieux Hall, Whittle le Woods, Chorley. The Home, 4, Everton Terrace, Liverpool.	The Congregation of the Brothers of Charity. Committee of Management ...	Do. do.	20 females. Feeble-minded and moral defectives over the age of 16 years.
(Do.) ...	Pontville R.C. Special School, Aughton, Ormskirk.*†	Board of Management ... Hon. Sec. :—Rev. J. Bennett, 1a, Trueman Street, Liverpool.	C. T. Barton, Clerk to Justices, Liverpool. G. W. Swift, 74, Hanover Street, Liverpool.	25 males: Roman Catholic feeble-minded children between the ages of 5 and 16 years. <i>Certified by Board of Education for 121 boys and by Home Office for 121 boys.</i>

* Certified as a Special School by Board of Education.
† Certified as a Special Industrial School by Home Secretary.

CERTIFIED INSTITUTIONS—continued.

COUNTY OF COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Lancashire— <i>contd.</i>	Royal Albert Institution, Lancaster.	Central Committee of Management ... (Medical Superintendent: W. H. Coupland, L.B.C.F. & S., Ed.)	J. T. Sanderson, 67, Church Street, Lancaster.	800 males and females.
Leicester ... (Leicester C.B.)	Leicester Frith, Groby Road, Leicester.	The County Borough Council of Leicester. Clerk of the M.D. Committee, Alliance Chambers, Horsefair Street, Leicester.	W. J. Freer, 10, New Street, Leicester.	120 males and 152 females, including those in ancillary premises.
London ...	Stretton Hall, Leicester	The Leicestershire and Rutland Joint Board.	Do. do.	Not more than 10 males or 40 females. Total, 50.
London ...	The Helping Hand Home, 16, Cathcart Hill, Highgate, N.19.	Committee of the Association for Helping Mentally Deficient Children. Hon. Sec.:—Mrs. Geoffrey Russell, 20, Gower Street, W.C.1.	Jno. Dix, Sessions House, Newington, S.E.1.	30 feeble-minded females, preferably from the age of 16 years.
London Lock Hospital, 283, Harrow Road, W.9.	London Lock Hospital, 283, Harrow Road, W.9.	Committee of Management ...	Do. do.	7 female feeble-minded and moral defectives.
South Side Home, Streatham Common, S.W.16	South Side Home, Streatham Common, S.W.16	The L.C.C. Mental Hospitals Committee... Chief Officer:—Mental Hospitals Dept., The County Hall, Westminster Bridge, S.E.1.	Do. do.	80 female high-grade feeble-minded adults who, save with the previous consent of the Board of Control, shall be on licence from other Certified Institutions.
St. Teresa's, 97, Belmont Hill, Lewisham, S.E.13.	St. Teresa's, 97, Belmont Hill, Lewisham, S.E.13.	Committee of Management ...	Do. do.	120 female adults, high and medium grade.
Middlesex ...	Bramley House, Clay Hill, Enfield.	Middlesex Mental Deficiency Committee... Clerk:—H. Scott Freeman, Staines.	E. S. W. Hart, Guildhall, Westminster, S.W.1.	50 female feeble-minded cases, aged 16 years and upwards.

Crathorne, Oak Lane, East Finchley, N.2.	The Church Army ... Hon. Sec.:—Mrs. Cannon, 57, Bryanston Street, London, W.1.	Do.	do.	33 mothers and their children who are feeble-minded or moral defectives. The number of mothers never to ex- ceed 20, and no child to be retained beyond the age of 7 years. Poor Law cases received.
Pield Heath House School, Hillingdon, Uxbridge.*†	Board of Management	Do.	do.	53 females. Feeble-minded and moral defectives of the Roman Catholic religion. Total cases not to exceed 123, and all to be fit for association with children. <i>Certified by Board of Education for 90 girls, and also certified by Home Office.</i>
St. Raphael's, The Butts, Brentford	The Order of the Poor Servants of the Mother of God.	Do.	do.	60 high grade feeble-minded girls of 16 years and upwards, Roman Catholics.
Norfolk ...	Norfolk C.C.... .. (Medical Superintendent: J. V. Morris, M.B.).	J. Middleton, M.B.E., Thorpe Mental Hospital, Norwich. Do.	do.	70 females.
(Norwich C.B.)	Norwich C.B.	J. F. Betts, Town Close, Norwich.	do.	28 male and 120 female adults and 28 male juveniles.
Northumberland	North Eastern County Boroughs Joint Board for the Mentally Defective. Committee of Management Northumberland M.D. Committee ... Do. do. Do. do.	H. D. Irwin, 10, Elli- son Place, New- castle-on-Tyne. Do. do. Do. do. Do. do.	do.	196 males and 226 females: all classes. <i>Certified by Board of Education for 50 boys and girls.</i> 16 female adults.
Oxford	Bucks, Oxon and Reading Joint Board for the Mentally Defective.	F. G. Scott, County Hall, Oxford.	do.	32 male adults. 51 male adults. 44 females. 46 male and 54 female adults.

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CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situated C.B. = County Borough	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Somerset ...	The Friars, Fryern Lawn, Bridgwater.	Miss A. E. Best ...	C. E. Newman, 68, Boulevard, Weston-super-Mare. Do.	17 females. Feeble-minded and moral defectives. 60 males and 101 females. <i>Certified by Board of Education for 50 boys and 50 girls.</i>
	Sandhill Park, Bishop's Lydeard, Taunton,* <i>with ancillary premises:</i> Yatton Hall, Yatton, Bristol; Cambridge House, Flax Bourton, Bristol; and West End House, Shepton Mallet.	Somerset C.C. ...	Do. Do. Do.	76 patients. 104 males. 129 females.
(Bath C.B.) ...	The House of Help for Women and Girls, 112 Walcot Street, Bath.	Board of Management ... Sec.:—Miss L. Glynn Baker, 112, Walcot Street, Bath.	E. N. Fuller, LL.B., Bath.	66 feeble-minded females.
(Do.) ...	The Old Rectory, Bathwick Hill, Bath.	Bath Voluntary Association ...	Do.	21 high or medium grade feeble-minded adult females <i>admitted</i> on licence from other Institutions. 38 children of both sexes.
(Do.) ...	Rock Hall House (Magdalen Hospital School), Combe Down, Bath. Stoke Park, Bristol, <i>with ancillary premises.</i>	Municipal Charity Trustees of the City of Bath. <i>See under County of Gloucester.</i>	Do.	
Stafford ...	Stallington Hall, Blythe Bridge, Stoke-on-Trent. Great Barr Park Colony, Great Barr, Birmingham.	Stoke-on-Trent County Borough Council Wallsall and West Bromwich Joint Board. (Medical Superintendent, D. M. MacMillan, M.B.) Ipswich County Borough Council...	H. L. Underwood, County Buildings, Stafford. Do.	77. <i>Mansion</i> : 16 boys under 21 and 44 females. <i>Male Block</i> : 17 males over 16. 683 patients.
Suffolk ...	Handford Home, Ranelagh Road, Ipswich. St. Joseph's Home, The Croft, Sudbury.	Board of Management ...	F. S. Ward, 32, Museum Street, Ipswich. T. M. Braithwaite, Sudbury.	22 females. High-grade feeble-minded cases over the age of 16 years. 28 feeble-minded females from 16 to 20 years of age, and of the Roman Catholic religion. Poor Law cases received.

Surrey.	Chief Officer—Medical Hospitals Dept., The County Hall, Westminster Bridge, S.E.1.	Chair, King's Cross-on-Thames.	Number, Experience or Disposition.
The Manor Institution, Epsom, Surrey, with ancillary premises: Hollywood Lodge, Epsom Common.	Do. do. (Medical Superintendent: E. S. Littlejohn, L.R.C.P.)	Do. do.	608 males and 663 females. All classes within the meaning of the Act. Reserved for London cases only.
The Royal Earlswood Institution for Mental Defectives, Redhill.	Board of Management (Medical Superintendent: S. Langton, M.B.)	Do. do.	575 patients of both sexes.
Mount Olivet, Frensham, Farnham. ...	The Congregation of the Servants of Christ the King ...	Do. do.	30 feeble-minded males—age on admission 16 to 20 years. Church of England cases only.
Botley's Park, Chertsey, with ancillary premises: Murray House, Otter-shaw.	Surrey County Council. ...	Do. do.	97 male adults of the younger employable type.
Clerk's Croft, Bletch-ingley.	Do. do.	Do. do.	256 female adults and children of either sex.
The Royal Hostel, Royal Common, Elstead, Godalming.	Surrey Voluntary Association ...	Do. do.	102 males. Imbeciles and feeble-minded over the age of 16.
Eagle House, London Road, Mitcham.	Surrey Voluntary Association ...	Do. do.	32 high-grade male adults.
The Ellen Terry National Home for Blind Defective Children, Reigate*	Executive Committee, Braille and Servers of the Blind League.	Do. do.	46 high grade imbecile and feeble-minded females over 16.
6, Morland Road, Croydon.	Croydon County Borough Council ...	Do. do.	30 blind defectives up to the age of 16. Certified by Board of Education for 30 children.
Thorpe Place, Thorpe, Chertsey.	See under County of Hampshire—St. Mary's Home, Alton.	J.M. Newnham, Town Hall, Croydon	20 low grade juvenile males.
The Hermitage, Fairwarp, Uckfield, with ancillary premises: Wharf House, Lewes; and Lark's Hill, Fairwarp.	The Committee: E. Sussex County Council	H. J. T. Mellveon, County Hall, Lewes.	42 females.
"Dungates," Horeham Road.	Brighton Guardianship Society, 2, Old Steine, Brighton.	Do. do.	7 feeble-minded males
Tubwell Farm, Jarvis Brook.	Do. do.	Do. do.	7 feeble-minded males.

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CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situated C.B. = County Borough.	Address of the Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Sussex, East— <i>contd.</i>	Laughton Lodge, Laughton, Lewes.	Brighton County Borough Council ...	D. Aukland, County Hall, Kingston- on-Thames.	34 male adults.
Sussex, West ...	The Home of the Holy Rood, Worthing.	<i>See under County of Hampshire—St. Mary's Home, Alton.</i>		
Warwick ...	Midland Counties Insti- tution, Knowle, near Birmingham. Warwickshire Weston Colony, Weston- under-Weatherley, Leamington Spa. Coleshill Hall, near Birmingham. The Agatha Stacey Home, Rednal, near Birming- ham.	General and Managing Committee ... Warwickshire M.D. Committee ...	A. C. Burrows, 1, New Street, Warwick. Do. do.	180 male patients. 40 male and 18 female adult feeble- minded.
(Birmingham C.B.)	Monyhull Colony * King's Heath, Bir- mingham, with ancil- lary premises : "The Laurels," 233, Monyhull Road, King's Norton. 1, Wilcot Road, Pewsey.	Birmingham M.D. Committee (Medical Superintendent: H. F. Stephens, L.R.C.P.) The Committee of the Agatha Stacey Home. Financial Sec. :—Miss C. P. Fleetwood, Depot, 158, Broad Street, Birmingham. Birmingham City Council (Medical Superintendent: A. M. McCutcheon, F.R.F.P.S.)	Do. do. C. E. Barker, Bir- mingham. Do. do.	120 males and 180 females aged 16 years and upwards. 40 high-grade female feeble-minded patients over 15 years of age. 583 males and 647 females. All classes. <i>Certified by the Board of Education for 310 children.</i>
Wilts ...		Wiltshire M.D. Committee ...	W. L. Bown, Trow- bridge.	81 males.
Worcester ...	Besford Court Home, near Defford.*† with ancillary premises ; St. Joseph's, Astwood Bank, near Redditch.	Committee of Management ...	C. H. Bird, Shire Hall, Worcester.	160 males ; all cases, whether under or over the age of 16 years, to be of a degree of mental defect such as will permit of their being housed and instructed with the children for whom the school is primarily in- tended. Total cases not to exceed 380. <i>Certified by Board of Education for 210 boys, and also certified by Home</i>

Yorks, W.R. ...	Rawcliffe Hall, near Goole.	West Riding Mental Defective Committee Sec.:—W. H. Brown, County Hall, Wakefield.	W. H. Coles, Burton Street, Wakefield.	121 females. All classes within the meaning of the Act—10 years of age and upwards.
(Leeds C.B.) ...	Meanwood Park Colony, Meanwood, Leeds.	Leeds Mental Defective Committee ... Correspondent:—S. Wormald, Executive Officer, 38, Park Square, Leeds.	F. Richards, Town Hall, Leeds.	163 males and 268 females.
(Do.) ...	Kepstorn, Morris Lane, Kirkstall, Leeds.	Do. ...	Do. do.	40 females. High grade feeble-minded patients over 16 years of age.
Yorks, W.R. ...	Mid-Yorks Certified Institution, Whixley, Yorks.	Mid-Yorkshire Joint Board for the Mentally Defective.	W. H. Coles, Burton Street, Wakefield.	214 males. All classes within the meaning of the Act.
	The Mansion, Kirkburton, near Huddersfield.	Clerk:—J. Thornton, Town Clerk's Office, 11, Park Square, Leeds.	Do. do.	60 females
	Oulton Hall, Oulton, near Leeds.	West Riding M.D. Acts Committee ...	Do. do.	264 males. In-County cases only.
	St. Catherine's, Lovells, Doncaster.	Do. do.	Do. do.	20 males and 120 females.
	Craigie Lea Children's Home, Ovenden, Halifax	S.W. Yorkshire Joint Board for the Mentally Defective. ...	Do. do.	16 males and 12 females.
	Hollow Meadows, Malin Bridge, Sheffield.	Halifax County Borough Council ...	Do. do.	58 imbecile and feeble-minded males.
	Wales Court, Wales, Kiveton, Sheffield.	Sheffield City Council ...	Do. do.	50 females. All classes within the meaning of the Act.
(Sheffield C.B.)	Cliffe House, Elm Lane, Shiregreen, Sheffield.	Do. do. ...	F. B. Dingle, Court House, Sheffield.	29 low-grade juvenile males.

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CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Address of the Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
(Bradford C.B.)	Westwood, Clayton Heights, Clayton, near Bradford, with ancillary premises: Ashfield, 269, Thornton Road, Thornton, near Bradford.	The County Borough Council of Bradford Clerk:—Town Clerk, Town Hall, Bradford.	W. H. Coles, Bank House, Burton St., Wakefield.	120 of each sex. All classes within the meaning of the Act.
Yorks, E. R. ... (Kingston-on-Hull, C.B.)	Tilworth Grange, Sutton, Hull. Brandesburton Hall, Brandesburton.	Kingston-on-Hull County Borough Council E. Riding and York Joint Board ...	W. C. Bairstow, Law Courts, Hull. G. Macdonald, County Hall, Beverley.	50 adult males. All classes within the meaning of the Act. 83 females. All classes within the meaning of the Act. 65 medium to high-grade females (juveniles and younger adults); 35 active low-grade females of all ages; 21 working males over the age of 16 years.

INSTITUTIONS APPROVED UNDER SECTION 37.

Owning Local Authority	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Bedford...	St. Peter's Hospital, Kimbolton Road, Bedford.	G. J. M. Whyley, Bedford	13 adult females.
	1, Grovebury Road, Leighton Buzzard.	J. B. Graham, Shire Hall, Bedford.	6 female adult feeble-minded and moral defectives.
Berks ...	Central House, Bradfield, Reading	H. J. C. Neobard, Shire Hall, Reading.	95 females.
	St. Anthony's, Binfield Road, Bracknell, Berks.	Do. do.	97 males.
Bucks ...	100, Bierton Hill, Aylesbury ...	H. Fisher, County Hall, Aylesbury	18 male and 12 female adults.
	19, Stratford Road, Buckingham	Do. do.	14 male and 10 female adults.
	1, Buckingham Road, Winslow ...	Do. do.	9 males and 40 females. Medium to low grade adults.
Cambridge ...	81A, Mill Road, Cambridge ...	J. Lyon, 21, St. Andrew Street, Cambridge.	4 male and 10 female adults. Suitable for treatment in a common ward.
	29, Union Lane, Cambridge ...	Do. do.	2 male and 8 female adults.
	The Red House, Linton ...	A. Tabrum, Clerk of the Peace, Cambridge.	3 female adult feeble-minded and moral defectives.
Isle of Ely ...	Tower House, Cambridge Road, Ely	C. E. F. Copeman, County Hall, March.	10 female adults.

INSTITUTIONS APPROVED UNDER SECTION 37—continued.

Owning Local Authority.	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Caernarvon	Eryri Hospital, Caernarvon ...	A. Bodvel-Roberts, Caernarvon ...	19 males under 12 and 16 females under 16.
Cheshire	Tarvin House, Boughton Heath, Chester.	G. C. Scrimgeour, Northgate Street, Chester.	15 male and 40 female adults.
(Birkenhead C.B.)	Birkenhead Union Sanatorium, Tranmere, Birkenhead.	E. W. T. Gasking, Sessions Court, Birkenhead.	30 adults.
(Chester C.B.)	57, Hoole Lane, Chester	G. C. Scrimgeour, Northgate Street, Chester.	40 females.
Cornwall	Berry Tower House, Bodmin ...	F. A. H. Sheers, Clerk of the Peace, Truro.	5 male and 20 female adults.
	Budock House, Falmouth	Do. do.	34 males and 36 females; (10 adult males, 21 adult females, and 24 male and 15 female juvenile defectives).
Denbigh	Gorphwysfa Hospital, Ruthin ...	W. Jones, Ruthin	15 male and 20 female adults.
Derby	12A, Newbold Road, Chesterfield ...	W. B. Bunting, Chapel-en-le-Frith	1 adult female.
	Shire Hill View, Glossop	Do. do.	15 male and 12 female adults; imbecile and feeble-minded defectives.
(Derby C.B.)	Boundary House, Utttoxeter Road, Derby.	W. R. H. Whiston, Derby ...	30 adult females.
Devon	19, Alexandra Road, Barnstaple ...	S. A. Copp, Barnstaple	20 male and 6 female adults.
	Western Road, Crediton.	F. A. Pearce, Exeter	18 male and 44 female adults.
	Red Hill House, St. Thomas, Exeter	J. I. Pengelly, The Court House, Exeter.	6 male and 12 female adults.
	1, North Road, South Molton ...	R. L. Riccard, South Molton ...	15 male and 24 female adults.
(Plymouth C.B.)	Ford House, Auckland Road, Devonport.	J. Bone, Plymouth	25 males and 50 females.
(Exeter C.B.)	Heavitree Road, Exeter	J. I. Pengelly, The Court House, Exeter.	12 adults of each sex.

Dorset ...	Bedford House, Bedford Place, Bridport.	J. L. Torr, Dorchester. ...	29 female adults.
Durham ...	Oaklands, Bishop Auckland ...	G. H. Watson, Darlington ...	82 adult females.
(Darlington C.B.) ...	90, Yarm Road, Darlington ...	Do. do.	12 males and 12 females. Medium to low-grade adults.
(Gateshead C.B.) ...	Gateshead ...	Do. do.	4 males and 19 females.
(W. Hartlepool C.B.)	Howbeck House, West Hartlepool	Do. do.	100 males and 120 females.
(South Shields C.B.)	1, Moor Lane, West Harton, South Shields.	Do. do.	78 adult males.
(Sunderland C.B.) ...	"Highfield," Hylton Road, Sunderland.	E. S. Dingle, Sunderland ...	2 male and 1 female adults.
Essex ...	People's Home, Saffron Walden ...	C. S. D. Wade, Clerk of the Peace, Saffron Walden.	18 female adults.
	Winstree House, Stanway, Colchester.	H. F. Bawtree, Witham ...	36 female adults.
(West Ham C.B.) ...	The Forest Gate Hospital,† Forest Lane, Forest Gate, E.7.	J. H. Jackson, Police Court, West Ham, E.15.	20 male and 30 female adults and 10 males and 15 females under the age of 16 years. <i>Certified by Board of Education for 15 cases.</i>
Flint ...	Cartrefle, St. Asaph ...	H. A. Tilby, County Offices, Mold	12 adults of each sex.
Glamorgan (Cardiff C.B.)	Ely Lodge, Ely, Cardiff ...	E. J. Hayward, Law Courts, Cardiff	51 male and 38 female adults.
Gloucester ...	24, Queen's Hill, Cirencester ...	R. W. Ellett, Cirencester ...	6 male and 18 female adults and 26 male and 20 female juveniles.
	East View, Mangersbury, Stow-on-the-Wold.	E. T. Gardom, o.B.E., Shire Hall, Gloucester.	5 male and 10 female adults.
	Gloucester Street, Winchcomb ...	Do. do.	4 males and 7 females.
(Bristol C.B.) ...	Stapleton Institution, Fishponds, Bristol.	S. Young, Petty Sessional Court House, Bristol.	100 male and 100 female adults.
(Do).	South Mead Hospital, Bristol ...	Do. do.	50 of each sex. 4 females over 16 years to assist in the work of the Institution.

† Certified as a Special School by Board of Education.

INSTITUTIONS APPROVED UNDER SECTION 37—*continued.*

Owning Local Authority.	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Hereford	The Infirmary, Ross	E. W. Maples, Hereford	25 male and 15 female adults.
Herts	"Haymeads," Bishop Stortford	P. E. Longmore, Hertford	40 female adults.
Isle of Wight	60, Vicarage Road, Watford	Do. do.	18 male and 22 female adults.
Kent	Forest House, Parkhurst, Isle of Wight.	H. Barber, The Castle, Winchester	20 males and 20 females. Idiot, imbecile, or feeble-minded defectives between the ages of 16 and 60 years.
(Canterbury C.B.)	Hartley House, Cranbrook	Charles E. Warner, Tonbridge	15 male and 20 female adults.
Lancashire	King's Hill, West Malling	Do. do.	14 female adults.
	2, Mill Lane, Sandwich	Do. do.	60 males and 52 females.
	Birchfield House, Sundridge, Seven-oaks.	Do. do.	30 female adults.
	The Home, Nunnery Fields, Canterbury.	T. A. Bowen, Clerk to Justices, Canterbury.	10 male and 10 female adults.
	27, Stanley Street, Ulverston	J. T. Sanderson, 67, Church Street, Lancaster.	85 adult females.
(Liverpool C.B.)	Eaves Lane, Chorley	L. Cotman, 8 Lune Street, Preston	15 male and 35 female adults.
Leicester	Seafield House, Seaforth, Liverpool	G. W. Swift, 74, Hanover Street, Liverpool.	101 males and 134 females.
	1, Coplow Road, Billesdon, Leicester	W. J. Freer, 10, New Street, Leicester.	12 male and 14 female adults.
	59A, Regent Street, Loughborough	Do. do.	24 female adults; feeble-minded and high grade.

Lincoln (Lindsey)	...	The Home, Caistor	...	E. W. Scorer, Lincoln	...	40 male and 70 female adults.
Do.	...	181, Lea Road, Gainsborough	...	Do.	do.	12 male and 12 female adults.
Do.	...	79A, Foundry Street, Horncastle	...	Do.	do.	12 male and 9 female adults.
Do.	...	The Gables, Hundleby, Lincs.	...	Do.	do.	18 adults of each sex.
(Kesteven)	...	Dysart Road, Grantham	...	R. F. M. White, Grantham	...	2 male and 15 female adults.
Do.	...	93, East Gate, Sleaford	...	W. T. Phipps, Grantham	...	1 male and 7 female adults.
Do.	...	Well Head House, Bourne	...	Do.	do.	4 adults of each sex.
(Lincoln C.B.)	...	8A, Burton Road, Lincoln	...	W. M. Phillips, Clerk to the Justices, Lincoln.	...	10 adults of each sex. Medium to low grade.
London	...	Darent Training Colony, Dartford	...	Chas. E. Warner, Tonbridge	...	Trainable cases.
	...	Leavesden Mental Hospital, Abbot's Langley, Watford.	...	P. E. Longmore, Hertford.	...	Unimprovable adults and cases of chronic infirmity.
	...	Caterham Mental Hospital, Caterham, Surrey.	...	D. Aukland, County Hall, Kingston-on-Thames.	...	Unimprovable adults. Low grade trainable children. 35 high-grade employable adult males at Chaldon Mead.
	...	Fountain Mental Hospital, Tooting Grove, S.W.17.	...	Jno. Dix, Sessions House, Newington, S.E.1.	...	Children. All classes up to 9 years. Unimprovable. Girls up to 16 years. Adult female working patients.
Merioneth	...	St. Stephen's Hospital, 369, Fulham Road, S.W.10.	...	Do.	do.	5 male and 10 female adults suffering from venereal disease.
Middlesex	...	Minfordd, Penrhyndeudraeth, Merioneth.	...	H. J. Owen, Clerk of the Peace, Dolgelly.	...	23 male and 27 female adults.
	...	Enfield House, 19, Chase Side Crescent, Enfield; with ancillary premises; Fortescue Villas, Gentleman's Row, Enfield.	...	E. S. W. Hart, Guildhall, Westminster, S.W.1.	...	Enfield House—42 males, feeble-minded boys and adult males. Fortescue Villas—32 females under the age of 16 years—idiots, imbeciles, and a limited number of feeble-minded cases.
	...	1, Colham Green, Hillingdon East, Uxbridge.	...	Do.	do.	12 male and 21 female adults.

INSTITUTIONS APPROVED UNDER SECTION 37—*continued.*

Owning Local Authority.	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Monmouth	Coedygic Institution, Griffithstown.	T. L. Hughes, Clerk of the Peace, Newport (Mon.).	55 female adults.
Montgomery	Cae Hein, Forden, Welshpool ...	J. E. Tomley, Montgomery ...	32 male and 48 female adults.
Norfolk	The Lodge, Caersws, Mont. ...	Do. do. ...	53 males and 46 females under 16 years of age.
	Hill House, Pulham Market ...	J. Middleton, M.B.E., Thorpe Mental Hospital, Norwich. ...	12 female adults.
	Cades Hill House, Attleborough ...	Do. do. ...	12 adult females.
	Aylsham Public Assistance Institution, Aylsham, Norwich.	Do. do. ...	10 male juveniles.
(Great Yarmouth C.B.)	150A, Caister Road, Great Yarmouth	G. Bracey, Great Yarmouth ...	2 males.
(Norwich C.B.)	The Lodge, Bowthorpe Road, Norwich.	J. F. Betts, Town Close, Norwich.	6 adult males and 10 females.
Northampton	77, London Road, Kettering ...	H. J. Cove, Northampton ...	16 male and 16 female adults.
	3A, Castle Street, Wellingborough	Do. do. ...	10 male and 19 female adults.
(Northampton C.B.)	137A, Wellingborough Road, Northampton.	A. J. Redhead, Northampton ...	9 adults.
(Soke of Peterborough)	Thorpe Road House, Peterborough	W. J. Deacon, Clerk of the Peace, Peterborough.	12 male and 21 female adults.
Notts	121, Highbury Road, Bulwell, Nottingham.	K. T. Meaby, Shire Hall, Nottingham.	40 female adults.
	1, Leverton Road, East Retford ...	Do. do. ...	4 male and 8 female adults.
	105, Stockwell Gate, Mansfield ...	Do. do. ...	6 male and 12 female adults
	Greet House, Upton, Southwell ...	Do. do. ...	3 male and 5 female adults.
Oxford	26, London Road, Chipping Norton	F. G. Scott, County Hall, Oxford.	14 male and 32 female adults.

Rutland	...	The Ashes, Ashwell Road, Oakham	B. A. Adam, Clerk of the Peace, Oakham.	8 adult females.
Shropshire	...	50, Shrewsbury Road, Church Stretton.	A. A. Johnson, County Buildings, Shrewsbury.	5 female adults.
Somerset (Bath C.B.)	...	The Beeches, Iron Bridge, Salop ...	C. J. Sargeant, Much Wenlock ...	10 male and 15 female adults.
Southampton	...	Frome Road House Institution, Odd Down, Bath.	E. N. Fuller, L.L.B., Guildhall, Bath	10 male adults.
	...	Cowderys Down House, Basing ...	F. V. Barber, The Castle, Winchester.	30 females. Feeble-minded over 16.
	...	52, Wickham Road, Fareham ...	Do. do.	30 male and 10 female adults.
	...	Barton House, Fordingbridge, Salisbury.	Do. do.	14 male and 13 female adults.
(Portsmouth C.B.)	...	140, St. Mary's Road, Portsmouth	B. J. Tay, Guildhall, Portsmouth	29 male and 31 female adults.
Stafford	...	15, Trent Valley Road, Lichfield ...	A. H. Barnes, Lichfield ...	2 female adults.
	...	Sedgley Institution, Dudley ...	H. L. Underwood, County Buildings, Stafford.	50 male and 65 female adults.
(Burton-on-Trent C.B.)	...	145, Belvedere Road, Burton-on-Trent.	H. W. Goodger, Stapenhill, Burton-on-Trent.	10 male and 15 female adults.
	...	Wordsley Institution, Stourbridge, with ancillary premises; Sandfield, Wordsley.	H. L. Underwood, County Buildings, Stafford.	186 male and 130 female adults, and 68 children.
	...	31, Wigginton Road, Tamworth ...	Do. do.	12 female adults.
(Wolverhampton C.B.)	...	Heath Town, Wolverhampton ...	H. M. Foster, Town Hall, Wolverhampton.	17 male and 14 female adults.
Suffolk (Ipswich C.B.)	...	Heathfield, Woodbridge Road, Ipswich.	S. Ward, 32, Museum Street, Ipswich.	20 male and 25 female adults.
Surrey	...	2, Horsham Road, Dorking ...	D. Aukland, County Hall, Kingston-on-Thames.	12 female adults.
	...	St. John's, Redhill ...	Do. do.	6 male and 9 female adults. (In-County cases only).

INSTITUTIONS APPROVED UNDER SECTION 37—*continued.*

Owning Local Authority.	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Sussex (East)	West Hylands, Cuckfield	H. J. T. McIlveen, County Hall, Lewes.	10 male and 20 female adults.
(Eastbourne C.B.)	2, Upper Shoreham Road, King- ston-by-Sea. Pouchlands House, East Chilting- ton, Lewes. St. Mary's Institution, 123, Church Street, Eastbourne.	Do. do. Do. do. Do. do.	5 adults of each sex. 36 males and 12 females aged 16 years and upwards. 7 medium to low-grade females over 16 years of age.
(Hastings C.B.)	40, Frederick Road, Hastings	F. G. Langham, 44a, Robertson Street, Hastings.	12 adults of each sex.
Sussex (West)	78, Crawley Road, Horsham Budgenor Lodge, Midhurst North View, East Preston, Little- hampton.	S. Thornely, County Hall, Chi- chester. Do. do. Do. do.	5 male and 10 female adults. 5 male and 15 female adults. 6 male and 15 female adults.
Warwick (Birmingham C.B.)	Erdington House, Erdington, Bir- mingham. Western House, Birmingham	C. E. Barker, Birmingham Do. do.	50 adults of each sex, and 31 male and 30 female juveniles. 6 adult females suffering from venereal disease.
Warwick	91, Union Road, Warwick	J. Tibbits, Warwick	4 male and 24 female adults.
Westmorland	Ackenthwaite End, Milnthorpe, Westmorland.	H. B. Greenwood, Clerk of the Peace, Kendal.	26 adult males, 27 adult females, and 18 boys and 24 girls.
Wilts	7, Commercial Road, Devizes	G. W. Jackson, Devizes	32 males under 16 and 16 females who are employable younger adults.

Purton, near Swindon	W. L. Bown, Trowbridge ...	18 boys and girls under 16 : idiots and cot and chair cases.
Semington House, Trowbridge ...	Do. do.	22 male and 36 female adults.
Kingsbury House, Wilton, Salisbury	Do. do.	65 female adults.
5, Avonside, Hampton, Evesham...	C. H. Bird, Worcester ...	4 males and 4 females.
Municipal Homes, Tallow Hill, Worcester.	J. L. Wood, Guildhall, Worcester	30 male and 20 female adults.
19, Bridlington Road, Driffield ...	J. R. Proctor, County Hall, Beverley.	15 male and 31 female adults.
188, Anlaby Road, Kingston-upon-Hull.	W. C. Bairstow, The Law Courts, Hull.	24 male and 24 female adults.
75, Huntington Road, York ...	H. Venn Scott, Clifford Street, York.	10 male and 20 female adults (idiot, imbecile and feeble-minded), and 20 low grade juvenile males.
High Hall, Bainbridge, Askrigg ...	I. N. Ware, 5, New Street, York.	20 female adults.
Holgate Institution, Barnabas Road, Middlesbrough.	T. Belk, Municipal Buildings, Middlesbrough.	7 adult females.
Sunbeck House, Northallerton ...	I. N. Ware, 5, New Street, York.	6 males and 6 females.
18, Dean Road, Scarborough ...	C. W. Goodall, Scarborough ...	35 male and 32 female adults.
80, Gawber Road, Barnsley ...	W. H. Coles, Burton Street, Wakefield.	10 adults of each sex.
The Bowling Park Institution, Bradford.	T. Gill, Bradford ...	15 female adults.
<i>with ancillary premises</i> : Odsal Sanatorium, Rooley Lane, Bradford.		
The Daisy Hill Institution, Bradford	Do. do.	20 male adults.
Springwell House, Balby, Doncaster	W. M. R. Lewis, Doncaster ...	20 adults of each sex.
Worcester		
(Worcester C.B.)		
Yorkshire : East Riding		
(Kingston-upon-Hull C.B.)		
(York C.B.)		
Yorkshire : North Riding		
Yorkshire : West Riding (Barnsley C.B.).		
(Bradford C.B.)		
(Doncaster C.B.)		

INSTITUTIONS APPROVED UNDER SECTION 37—continued.

Owning Local Authority.	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
(Halifax C.B.) ...	166, Gibbet Street, Halifax ...	W. H. Coles, Wakefield ...	29 male and 23 female adult active medium to low grade defectives.
(Huddersfield C.B.) ...	61, Deanhouse, Netherthong, Huddersfield. 1, Reins Road, Giggleswick, Settle	Do. Do.	10 male and 25 female adults. 37 males and 5 females, 27 males under sixteen years of age to be accommodated in the Isolation Hospital and 10 male and 5 female adults in the Main Building.
(Sheffield C.B.) ...	Fir Vale House, Pitsmoor, Sheffield The Beeches, Tadcaster ... Greno Buildings, Grenoside, Sheffield.	F. B. Dingle, Sheffield ... W. H. Coles, Wakefield ... Do.	40 male and 75 female adults. 24 adult females. 20 feeble-minded adult females.

CERTIFIED HOUSES.

COUNTY.	Name and Address of House.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Herts ...	Arniston Nursery School, Boxmoor House, Boxmoor, Herts.	Miss J. M. Isbister and Miss M. D. Isbister	P. E. Longmore, Hertford.	20 low-grade cases of either sex.
Lancashire ...	Cavendish House, Woodvale, Ainsdale, near Southport.	Miss Hutsby ...	G. W. Swift, 74, Hanover Street, Liverpool.	42 female patients from 3 years of age.
Middlesex ...	St. Margaret's, 9, Priory Road, Bedford Park, London, W.4.	Miss Rose H. D. Whiting ...	E. S. W. Hart, Guildhall, Westminster, S.W.1.	10 females. Imbeciles and feeble-minded.
	Larkfield, Hampton Hill ...	Mrs. E. Lethbridge ...	Do. do.	16 juveniles: 10 ambulant low grade imbeciles and 6 cot and chair cases.
	Normansfield, Kingston Road, Teddington.	R. L. Langdon-Down, M.B., and P. L. Langdon-Down, M.B.	Do. do.	150 males and females, not more than 100 of either sex at any one time.
Sussex, East ...	St. Joseph's Home, Burgess hill.	Proprietors of St. George's Retreat ...	H. J. T. McIlveen, County Hall, Lewes.	30 females of 12 years of age and upwards.
(Brighton C.B.)	Villa Maria, Kemp Town, Brighton.	Do. do. ...	A. G. Walker, Clerk to Justices, Brighton.	12 females. All classes within the meaning of the Act from 12 years of age and upwards.

APPROVED HOMES.

COUNTRY.	Name and Address of Home.	Names of Managers or Owners.	Number and Class of Defectives.
Berks ...	St. Agnes, Grove Hill, Caversham.	Miss Sarah Dugdale ...	3 male and 5 female juveniles.
Bucks ...	Lynwood, Woburn Sands, Bucks.	Mrs. A. M. Loveless ...	7 males.
Cheshire ...	"Westfield," London Road, Poynton	Miss E. C. and Miss M. F. Evatt ...	4 boys and 6 girls between the ages of 5 and 16 years.
Cornwall ...	The Elizabeth Barclay Home of Industry, Bodmin.	The Committee of the Elizabeth Barclay Home of Industry, Bodmin.	26 females.
Devon ...	Raleigh House, Ottery St. Mary.	Miss L. Cottrell and Miss E. Costiff ...	4 male and 11 female juveniles.
Dorset ...	Cornclose, South Brent	Miss B. E. Sutherns ...	10 females over the age of 14 years.
Essex... ..	Shirley, West Moors	Miss E. Coffin ...	6 feeble-minded female adults.
	Gay Bowers, West Hanningfield, Chelmsford.	Percy and Mrs. Gertrude Chennells ...	7 of one sex.
Gloucester ...	Southeast House School, Hatley Brake, Cheltenham.	Miss Agnes King-Turner ...	25 cases of either sex—each child in all respects suitable to be in a house where the sexes are associated.
Herts... ..	Rowley Lodge, Rowley Green, Barnet	Miss E. M. Wall ...	15 children.
	Jersey Farm, Sandridge, St. Albans,	H. Corner, M.D. ...	14 males.
	<i>with ancillary premises:</i> White House Farm Cottages, N.14.		2 able-bodied patients.
Kent	Upper Hollenden Farm, Princess Christian's Farm Colony, Hildenboro', Kent.	National Association for the Feeble-minded, 72, Denison House, 296, Vauxhall Bridge Road, Westminster, S.W.1.	18 males.
	Grove House School, Pluckley, Ashford.	Mr. and Mrs. H. T. Green ...	24 males between the ages of 7 and 16 years.
	Larkfield Hall, Larkfield, Maidstone.	Miss B. Sargeant ...	5 male and 6 female children.

Merioneth	...	Bryn School, Hengwrt Uchaf, Dolgelly.	Mrs. G. I. Parry and Mr. T. G. Parry	...	50 males.
Middlesex	...	Alexander House, 117, High Street, Uxbridge.	National Association for the Feeble-minded, 72, Denison House, 296, Vauxhall Bridge Road, Westminster, S.W.1.	...	24 females.
	...	Conifers, Kingston Road, Teddington.	R. L. Langdon-Down, M.B., and P. L. Langdon-Down, M.B., Normansfield, Hampton Wick.	...	3 male (children) and 22 female private patients.
	...	Trematon, Broom Road, Teddington.	Do.	do.	24 males. Private.
	...	St. Christopher's School, Amherst Road, Ealing, W.	Miss M. C. B. Foster	...	28 feeble-minded private patients.
	...	Meadowside, Cambridge Road, Teddington.	Miss F. M. Deck	...	13 patients of both sexes, provided each case is in all respects suitable to reside in a house where the sexes are associated.
Norfolk	...	Ingleside, Trimmingham, Norwich.	Miss S. A. Huntly	...	13 females.
Oxford	...	Oathurst, Bampton, Oxon	Mrs. E. V. Lawson	...	8 male adults.
Somerset	...	Lyncombe Hall, Bath	Miss W. Stanley	...	12 children.
Southampton	...	St. John's House, Sherborne Road, Basingstoke.	The Rev. A. H. Baverstock	...	10 males aged 14 years and upwards.
Surrey	...	Belmont Nursery, Beddington. Donec, Grayshott, Hindhead. Lynton, Coombe Lane, Kingston Hill.	Miss Lilian Mason Miss R. L. Binney Miss M. I. Morrell	...	35 children of either sex. 8 females. 6 females between the ages of 14 and 18 years on admission.
Sussex (East) (Hastings C.B.)	...	Tilden Cottage, Hindhead St. Paul's House, Upper Maze Hill, St. Leonards-on-Sea.	Miss A. Willsher Miss Jennie Meiklejon	...	8 males from 10 to 18 years of age. 33 defectives, not more than 5 to be males.

APPROVED HOMES—continued.

COUNTY.	Name and Address of Home.	Names of Managers or Owners.	Number and Class of Defectives.
Sussex (East) (Hastings C.B.)	Dunclutha, St. Helen's Park, Hastings. The Margaret Macdowall School, Inholmes Park Road, Burgess Hill. Roffey House, Church Road, Burgess Hill.	Miss Mole and Miss Bruce Miss A. Park and Miss E. M. Shelton	40 males. 22.
Sussex (West)	The Priory, Tortington, near Arundel. Coll House, Aldingbourne, Chichester. Haute Terre, Franklyn Road, Hayward's Heath. The Cedars, North Parade, Horsham.	Miss O. B. Matthews Miss D. S. Ault Miss M. A. N. Tabuteau Miss L. H. Smyth Miss V. McV. Moore	10 children. 14 males. 9 boys. 10 children. 8 males aged 14 years and upwards.
Warwick	The Vineyard, Longbridge Lane, Birmingham, <i>with ancillary premises:</i> (a) Moorgreen Hall, Weather-oak. (b) The Scotch House, Finstall, Bromsgrove (c) Vinette, Hugenden, Tile Hill, Coventry.	Miss M. F. Bridie	69 defectives (34 at The Vineyard, 8 girls at Vinette, 14 males at the Scotch House, 13 boys at Moorgreen Hall). Each case to be suitable to reside in a house where the sexes are associated.
Worcester	Clent Grove, Clent, Stour-bridge, and Sunfield Children's Home, Weoley Park Road, Selly Oak, Birmingham.	Mrs. L. Steer M. H. Wilson	16 male children. 57 patients.

