Assistance for the Tuberculous Invalid.

Another respect in which the public needs information is with regard to the requirements of the dependent tuberculous invalid. The penalties of dependency and destitution in the case of the tuberculous patient have not yet been grasped by the community. Some patients, having had during their stay at the sanatorium full and proper diet, find themselves unable to provide what is necessary on their return to their homes. Food is only one of the requirements of the tuberculous invalid. In various ways he needs assistance in his continued fight against disease, and in order that that assistance may be given, the creation of a co-operative public opinion is necessary. Another very important piece of work is to urge those responsible for the health of the people to ensure by all means in their power a pure milk supply, one which does not carry tuberculosis.

All this that I have sketched is in reality the trend of the teaching of the National Association for the Prevention of Tuberculosis. The National Association is not oblivious of what is being done officially. This country enjoys the benefits of a highly organized public health service, one of whose units is the tuberculosis service, and not the least important of the functions of this official service is that of education in health matters, with special reference to tuberculosis. The sanatorium or hospital, and also the tuberculosis dispensary, are educational forces, but the teaching needs to be carried farther, into the patient's home (where the interest of his own medical attendant is necessary), and among his family and friends. This calls for home visitation, supplemented by central meetings, the organization of which latter is not a little difficult. In a busy tuberculosis dispensary, with an ambitious staff, the day is all too short for the hundred-and-one tasks to be faced each morning, and the staff may not feel inclined to arrange meetings, nor may they have the financial means to enable them to organize such, including, for example, the display of films.

In this respect the assistance of the caravans sent out by the National Association is warmly welcomed. The medical commissioners who are sent out go, as has been said, in the spirit of team work. They fully appreciate the fact that each area may have its own special problems. They work in co-operation with the medical officers of health, tuberculosis officers, and general practitioners, many of whom in all parts of the country have expressed their thanks in unstinted terms to the National Association for carrying out a programme of popular lectures in their areas. But, of course, it remains for those residing in the area to render permanent the value derived from the occasional campaign, and in this respect no one has a greater opportunity than the general practitioner. As health education plans become more clearly defined, there can be no doubt that general practitioners will shoulder the burden of preventing disease as cheerfully and thoroughly as they shoulder the burden of treating it.

TREATMENT OF MENTAL DISEASE.

MORISON LECTURES, 1929.

DR. R. DODS BROWN, F.R.C.P.Ed., physician-superintendent, Royal Mental Hospital, Aberdeen, delivered the Morison Lectures before the Royal College of Physicians, Edinburgh, on June 3rd, 5th, and 7th, taking as his subject "Some observations on the treatment of mental diseases." Dr. R. A. Fleming, President of the College, occupied the chair on each occasion. Dr. Dods Brown dealt first with the historical aspect of the subject, and then with certain methods of treatment recently introduced or revived.

Historical Aspects.

At the outset the lecturer quoted from ancient Egyptian, Chinese, Hindu, Greek, Latin, and Arabian writings, referring in particular to the views of Hippocrates, Celsus, Soranus, Aretaeus, and Paul of Aegina. There was good reason to believe that many of the Greek and Roman physicians treated the mentally afflicted with great care and consideration. It was far otherwise in the succeeding centuries. One of those to protest against the abuses prevalent in this country in the seventeenth and eighteenth centuries was Daniel Defoe, who characterized the system as "the height of barbarity and injustice, and worse than a clandestine inquisition." These abuses persisted well into the nineteenth century, and readers of *Hard Cash*, written in 1863, would recall the dismal picture of life in private asylums presented by Charles Reade. Philippe Pinel (1745–1826) stood out in medical history as the first in modern times to treat the insane in a humane manner. Like most pioneers, he was met with much misrepresentation, ridicule, and hostility. The earliest of the reformers in this country were Tuke, Hill, and Conolly, and to this list might be added with justice the name of the founder of that lectureship, Sir Alexander Morison of Bankhead. The latter, in the face of much opposition, had begun a course of lectures on mental diseases in Edinburgh in 1823, and was far ahead of his time in his understanding and treatment of disorders of the mind. He recognized the benefit of beautiful surroundings, fresh air, sunlight, exercise, sea-bathing, occupation, amusements, and cheerful well-lighted apartments. A remedy he recommended was warm bathing, writing of it that "it tends to allay the tension and the agitation of the nervous system, and to soothe and to diminish an increased sensibility, both of which are very prominent symptoms in the insane state." He gave great consideration to the bodily health of his patients, ordering in certain cases special diet, acidulous fruits, and copious draughts of cold water. Only exceptionally did he prescribe alcohol, and he was no believer in administering drastic purgatives and emetics, as was customary at that time. Happily, it was now true to state that the patients in our mental hospitals were considered as persons sick in body and mind, and were treated as such. All so-called civilized countries, however, had not made the same advances.

Modern Methods of Treatment of General Paralysis.

It was questionable whether any method of treatment adopted for the relief or cure of mental disease had given rise to so much interest or to so extensive a literature as had the treatment of general paralysis by malaria, introduced by Wagner-Jauregg of Vienna. That acute fevers might bring relief to sufferers from mental troubles was known to the ancients, and Hippocrates believed that fevers, especially quartan fevers, relieved spasms and mental diseases. John Munro, in the eighteenth century, wrote that "an intermitting fever coming upon a madness of long standing has proved the cure of the madness." It was of interest to read in Sir Alexander Morison's lectures that he had observed in "dementia" that the occurrence of an acute disease had occasionally been the means of a cure. Stoddart had recently stated that the beneficial effect of malaria in insanity was discovered in 1848. Although Wagner-Jauregg suggested deliberate infection with malaria as a therapeutic measure in general paralysis in 1887, it was not until 1917 that he inoculated his first patient. In the interval he had experimented with various bacterial and non-bacterial preparations. It was now a historic fact that in 1917 Wagner-Jauregg inoculated nine general paralytics with blood infected with the *Plasmodium vivax*. Three passed into a complete remission which lasted for more than eight years, and three had incomplete remissions. The method had been in continuous use in Vienna since that time, and it was the claim of that school that 83 per cent. of early cases made a complete recovery. Few others were able to show such results, but there was general agreement as to the very great value of the treatment. In 1,377 cases treated with malaria, recently reported in the literature, 25.6 per cent. of complete clinical remissions and 30.4 per cent. of partial remissions were claimed. Thus 56 per cent. of patients were benefited. This contrasted very favourably with the percentage of spontaneous remissions, varying from 5 to 15, recorded by different observers. There was naturally difference of opinion as to the criteria of remission. Some were guided wholly by the mental improvement, others demanded, in addition, the disappearance

of all neurological findings, while yet others laid most stress on the serological findings. A survey of the results of malaria treatment of general paralysis in English mental hospitals had been made for the General Board of Control by Surgeon Rear-Admiral Meagher, and the lecturer had had access to the manuscript of the report. The results could be given in tabular form.

English Mental Hospitals (Meagher).

	1,173 Untreated Cases.		1,597 Treated Cases.	
		Per cent.		Per cent.
Dead	1,016	86 6	541	34
Alive	157	13.4	1,056	66
In hospital	117	10.0	652	41
Discharged	40	3.0	404	25

Meagher concluded by stating that, while malaria treatment precipitated death in a certain number of cases, it was valuable in extending life, in improving the mental and physical state, and in allowing some 30 per cent. of patients to resume normal life. The lecturer had also been fortunate in getting particulars of cases treated with malaria in Scottish mental hospitals. Excluding those that had received some form of specific treatment in addition to malaria, fifty remained for analysis. This figure included fourteen treated in the Aberdeen Mental Hospital. Twenty-four per cent. passed into a complete remission, 18 per cent. were greatly improved, 16 per cent. were slightly improved, and 22 per cent. died. Dr. Dods Brown then dealt in detail with the effects of the treatment on the serological findings, the technique of the methods of inducing malaria, the explanations offered of the mode of action, and the changes found in the brain in cases dying after the treatment. After a brief reference to the results of malaria therapy in other diseases, and to experiments with relapsing fever as a substitute for malaria, he passed to the use of other remedies in general paralysis and neurosyphilis—namely, tryparsamide, arsenical preparations, salvarsanized serum, bismuth, mercury, agents producing leucocytosis, and foreign proteins.

Dementia Praecox.

After the success attending malaria treatment in general paralysis, it was natural that its effect should be tried in dementia praecox. Marked, though not always lasting, improvement had resulted in early cases, but the method was without value in old-standing cases. The experience in Aberdeen Mental Hospital had been unfavourable. Carroll and his associates in America, by repeated intrathecal injections of 25 c.cm. of inactivated horse serum, had tried to influence the course of the disease by producing a meningeal reaction, a sort of aseptic meningitis. In more than half of the forty-nine cases treated, there was decided benefit lasting for at least several months. Kubitschek and Carmichael made trial of this method in forty-five cases, and concluded that it held distinct possibilities in early cases. In four patients so treated in Aberdeen there was no improvement.

Heliotherapy and Actinotherapy.

These measures had been employed extensively in the Aberdeen Royal Mental Hospital in the attempt to benefit the mental through the bodily health. More than 200 patients had received one or more courses of ultra-violet irradiation. Seventy-seven per cent. had increased in weight, and the majority had shown improvement in muscle tone, appetite, and sleep, as well as in the blood picture. It was customary also to treat most of the recent admissions and many of the physically ill patients not only in the open air, but by heliotherapy, according to the graduated method of Rollier. The beneficent effect of this on the well-being of the patients was unquestionable.

Occupational Therapy.

For very many years patients in mental hospitals in this country had been employed on the farm, in the garden, the workshops, the laundry, the kitchen, the sewing room, and other departments, but the economic question was often the primary consideration, and the work chosen was not always calculated to enlist the interest of the patients. Occupational therapy, with the one object of curing or benefiting the patient, was no new fad. D. K. Henderson found from old reports that the directors of the Glasgow Royal Mental Hospital had referred to occupation as a means of cure in 1816. There was a note in the Aberdeen Mental Hospital records to the effect that male patients were employed in gardening, and female patients in spinning flax in 1810. About forty years ago craft work was developed in several of the larger mental hospitals in Austria, and for a considerable time the value of this means of treatment had been recognized in America and Canada.

In 1898 Hamilton Marr introduced craft work under the Brabazon scheme into Woodilee Mental Hospital. The idea was adopted in other institutions in this country early in the century, but fell into abeyance. It was only recently in Britain that interest had been revived in organized occupational therapy, and for this D. K. Henderson deserved most of the credit. It was desirable that the work should be carried out away from the wards in a special building which should be as bright and pleasant as possible. The complete change of environment was important. The department should be managed by a special teacher or teachers, who had nothing to do with the care and treatment of the patients in the wards. There should be a special annexe where noisy work, such as carpentry and metal work, was done. There was no limit to the variety of crafts that could be taught. In Aberdeen thirty different crafts were engaged in by the patients. The development of this means of treatment marked a very real advance.

At the close of the third lecture Professor G. M. ROBERTSON, physician-superintendent, Royal Mental Hospital, Edinburgh, moved a vote of thanks to Dr. Dods Brown.

FUNCTIONAL PROBLEMS OF CONVERGENCE.

SIR CHARLES SHERRINGTON'S FERRIER LECTURE.

THE contributors to a fund to commemorate the late Sir David Ferrier and his pioneer work upon the functions of the brain requested the Council of the Royal Society to accept the sum of £1,000 in trust for the institution of a David Ferrier Lecture. The Council, in accepting the trust, decided that the lecture should be given triennially on "a subject relating to the advancement of natural knowledge of the structure and function of the nervous system."

The first David Ferrier Lecture was delivered before the Royal Society, on June 20th, by Sir CHARLES SHERRINGTON, O.M., F.R.S., who took as his subject "Some functional problems attaching to convergence." The author's summary of the lecture is as follows:

The arrangement of the conducting paths of the nervous system, branching and redistributing their impulses as they do, exhibits places where numerous convergent paths run into one. When at such places two or more of the converging arcs are concurrently active, the trains of impulses arriving by them can interact. Such convergent places are co-ordination points. An example of such importance, and relatively accessible to experiment, is that in the spinal cord, where the motor nerve cells innervating a muscle receive as a group the various afferent paths which reflexly operate the muscle. If two or more of the convergent afferent nerves are excited concurrently the reflex interaction, as revealed by the muscle, exhibits three main sets of cases.

In one set of cases the muscular response under concurrent stimulation of two or more afferents shows a deficit in amount as compared with the sum of the responses obtainable from the several afferents taken separately. This occurs especially when the excitation of the reflexes is strong; it is most marked when they are of maximal strength. The contraction effect of one afferent may default altogether. The result might seem to indicate inhibition, but analysis shows that it is not referable to any form of inhibition. The explanation lies in the limita-