books and reporting to a central authority—a necessity which, I affirm, has in this country brought into desuetude a valuable means of treatment. That such a necessity exists at all is, I conceive, mainly due to the unwarrantable preponderance of legal over scientific medical authority, which is tolerated because in this country there is as yet no widespread respect for learning, and no proper confidence in, but still a general disregard of, the "professor" in the various branches of science, mingled, in the case of the alienist, with a certain amount of suspicion.

As regards the class of case to be accommodated in the psychiatric clinic, this need not be strictly limited to the well-recognized forms of insanity. Thus, at the Munich clinic the following morbid states, in addition to the kinds of mental disease usually received at asylums, were dealt with from 1904 to 1907: Brain syphilis, arterio-sclerosis, alcoholic mental conditions such as delirium tremens and dipsomania; hysteria, various psychopathies; mental symptoms with chorea, with facial erysipelas, with Graves's disease, with uraemia, with morphine, cocaine, or heroin habit; cerebral abscess and tumour; cases for diagnosis, found not to be insane; cases with various mental symptoms in which the diagnosis remained obscure.

For the purpose of demonstrating chronic cases of insanity and congenital cases either the local asylum would have to be visited or material drawn thence. Cases of mental defect or insanity in prisoners, including criminals, should be available for study and demonstration by arrangement with the prison authorities.

In all cases of doubt and difficulty the psychiatric clinic would have the advantage of the advice and assistance of those in charge of the other clinics of the university or hospital. Such a clinic would be the natural training place for students who proposed to take up mental disorders as a speciality, and for those who seek a diploma in psychiatry, such as many of us are now advocating, and hope will be instituted by the Colleges of Physicians. If at present the junior medical officers of our asylums are mainly young men who have entered upon their work without any more knowledge of it than accrues from the ordinary lectures at the hospital and perfunctory rounds at a neighbouring asylum, gone through with very little interest, chiefly for the purpose of getting "signed up," the reason is to be found in the absence of proper facilities for study and training such as a psychiatric clinic would provide.

The advantages to the medical and nursing staff and to recent and curable cases of mental disease of carrying on work in contiguity to other clinics are obvious. In marked contrast, indeed, are the conditions of segregation under which the work of the average county asylum is carried on. The disabilities from a medical point of view are great; under them medical and nursing ideals tend to fade, and the spirit of research is enfeebled. Furthermore, the proportion of medical and nursing staff to patients is commonly too low to permit of carrying out work or giving individual attention in a manner comparable to that usual in ordinary hospitals. I apprehend this proportion is adhered to as being that which, having regard to the available weekly maintenance-rate, is just adequate to the necessary supervision and control of the patients. One recognizes, in short, the ideal of a workhouse, gaol or reformatory. Tanzi, in his recent work on mental disorders, refers to British asylums as institutions run on philanthropic lines, but suggests that nothing in the way of scientific work is carried on in them; this is the effect of his words. There are notable exceptions to which he, perhaps, does scant justice. And here let me allude to the laudable recent departure of the Commissioners in Lunacy in devoting a portion of their annual report to the subject of scientific research in asylums, a step which cannot fail to encourage and to stimulate. It is greatly to be desired that Government grants should be available on the recommendation of the Commissioners for helping forward such research, the results to be published in the Blue Book.

For the congenital, the chronic and incurable, and the insane epileptic classes plain buildings in the country with farm and garden attached, would suffice. A house in the country for convalescents from the clinic would be a most useful adjunct to the latter.

As this address is concerned with an ideal, it is not incumbent upon me to indicate the methods by which the scheme outlined is to be put into practice. I cannot

profess to be a believer in the voluntary principle as applied to the maintenance of hospitals, nor, for that matter, to the maintenance of the machine of national defence. I do not believe that this principle is successfully applied in practice in either case. I take the view that it is the duty of the rulers of a State to impose upon its people military service, and to render obligatory provision for the treatment of the sick poor. Whilst holding these views, I must heartily welcome Dr. Maudsley's well known initiative in the matter of providing a psychiatric clinic in London, more especially as the completion of the institute and its maintenance will, I believe, devolve upon a public authority. I see no reason why, if a private individual desires to pay for an addition or improvement, architectural, curative, or otherwise, to an institution such as a psychiatric clinic, maintained by the State, the municipality, or the county council, he should not do so.

Under existing circumstances, the nearest approach to the ideal outlined above can probably be exhibited by a mental hospital in close proximity to a university city well provided with laboratories and with a complete medical school. In order to obtain the benefit of such proximity it is essential that the mental hospital be well found in laboratories and all other facilities for work; that it be animated by medical ideals; that the governing body recognize that a determination to carry on the work on a high scientific level, implying, as it does, a higher proportion of staff, a more skilled staff, expenditure on laboratory materials, payment for advice and treatment from specialists from the town, is incompatible with the average borough asylum rate of maintenance. If these essentials are non-existent, the institution, however imposing its proportions and perfect its architecture, will be one of no importance, will mark no step forward, and might as well have been located in the depths of the country.

A Clinical Lecture

ON

CARDIOLYSIS.

DELIVERED AT THE ADELAIDE HOSPITAL, DUBLIN.

BY

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IN considering the heart it is necessary to remember that it is a pump, whose continued efficiency depends on two factors: (1) The power available, and (2) the amount of work it is obliged to do.

The invariable cause of heart failure is disturbance in the normal relation of these factors. The disturbance of relation may be one of two kinds—either the power may become deficient while the work remains unaltered; or, while the power remains normal, or even may increase, the work may become excessive.

Dense adhesions between the heart and surrounding structures are a cause of excessive work; such a condition exists in indurative mediastino-pericarditis, in which the heart becomes adherent to the parietal pericardium and it again to the back of the ribs and sternum—firm and unyielding structures. Such adhesions make it difficult for the heart to contract, and so increase the heart's work at every systole. In order to allow the heart more readily to contract, Brauer, in 1902, proposed to remove the parts of the ribs which overlies the heart and, if necessary, a part of the sternum also, so as to replace the bony framework by a soft membrane, consisting of skin, subcutaneous tissue, and pericardium, and thereby remove the obstacle to the heart's systole. This operation has been done, as far as I know, about sixteen times, with no deaths as the immediate result of the operation, and with considerable benefit to the patients in most of the cases. For details of the cases and for remarks on the surgical aspects of the operation I am indebted to a most interesting and valuable paper by Mr. Thorburn, who records one case of his own—the first reported from the British Islands.¹

But it is not as a treatment for pericardial adhesions that I want to bring before you the subject of cardiolysis.

I believe it will be found of use in a much larger and more important class of cases. In July, 1908, Dr. Alexander Morison published a very important paper,² based on a case of his, in which the operation was done mainly to relieve anginoid pain in a boy suffering from aortic regurgitation; $4\frac{1}{2}$ in. of the fifth rib and $5\frac{1}{2}$ in. of the sixth rib were removed. The boy bore the operation well, and six weeks afterwards the anginoid attacks were much lessened, and the patient felt altogether stronger and better than before.

Dr. Morison advocates cardiolytic on two grounds—(1) To relieve intrathoracic pressure, both when the mere bulk of the heart was the chief feature in the case, and when, as in irremovable mediastinal tumour, the heart was secondarily involved in the neoplastic growth; and (2) to prevent undue stimulation of the heart. He says the brunt of the heart's beat is normally expended against a soft interspace. When, however, the heart is increased in size, its apex thrusts against one or more ribs, which are hard and unyielding. He holds that this blow may develop a morbid excitation of the heart, which may cause increased systolic pressure associated with discomfort or pain. "It is reasonable to suppose, therefore," he writes, "that providing the enlarged and powerfully pulsating heart with a proportionately large interspace void of osseous resistance might prove a means of sparing its energy."

While I recognize that Dr. Morison's paper constitutes a great advance in our views as to the indications for cardiolytic, I think it does not place them quite on the correct basis. Let me develop my own views in connexion with a case at present under my care.

A girl aged 12 years suffered a year ago from an attack of chorea; otherwise she was never ill. In connexion with the chorea she appears to have had acute mitral endocarditis, for she has now come into hospital suffering from great breathlessness and from discomfort and some pain about her heart. There is no dropsy or signs of congestion of the lungs, liver, or kidneys, but the child is incapable of any exertion and looks very wretched and ill; compensation has evidently broken down. On examining her we find, in addition to a mitral systolic murmur, signs of considerable hypertrophy both of the left and right ventricles; the apex beat is in the fifth space, $3\frac{1}{2}$ in. from the middle line and very forcible, and the third, fourth, and fifth ribs and the lower half of the sternum are heaved up by every systole of the heart.

Let us trace the sequence of events in this heart. By the mitral regurgitation more work was thrown on the heart; the left ventricle became dilated and hypertrophied, and the right ventricle hypertrophied. The heart increased in bulk; for a time it had room enough inside the thorax to perform its systolic movements, but as it increased still more, room became deficient.

During diastole the heart is more or less flaccid, and accommodates its shape to that of the space in which it is placed; it encroaches at each side on the soft and yielding lung, and tends to increase laterally; but during systole, as the pressure rises, the heart becomes more globular, and increases in size from before backwards. But there is only a limited space between the spine behind and the ribs and sternum in front. When the heart hypertrophies to a certain degree, it comes to press during systole against the spine behind and the ribs and sternum in front. The spine is absolutely unyielding; the heart cannot gain any more space in that direction; so, as it increases further in size, it is forced in its systole to press the ribs and sternum forwards. So in this child we feel the sternum and the ribs rising perhaps one-sixteenth, perhaps one-eighth of an inch with each systole. To raise the lower half of the sternum and the fourth and fifth ribs even one-sixteenth of an inch eighty times a minute constantly day by day and week by week requires an enormous expenditure of energy. If at a post-mortem examination one hand is put under the sternum (the ribs being intact) and an endeavour made to raise it one-sixteenth of an inch, it will be found that it presents great resistance. And yet what the hypertrophied heart is called on to do is to raise the ribs or sternum in some cases fully one-eighth of an inch eighty or one hundred times every minute as long as the patient lives.

In the girl whose case I have described we may divide the extra work the heart is obliged to do into two varieties: (1) Internal, the extra work thrown on the heart by the leak in the mitral valve; and (2) External, the work which the heart is forced to perform in raising

the ribs and sternum with each systole. We cannot cure the leak; we cannot wholly remove the internal extra work, though by rest and appropriate treatment we endeavour to lessen it; but the external extra work, I think, can be removed by giving the heart space enough from before backwards, so that it may not be forced to move unyielding structures at each systole—that is to say, by resecting several ribs and, if necessary, a part of the sternum. For such cases I believe cardiolytic will be found of very great use, and if the condition of the patient is sufficiently good, I think we should very seriously consider the advisability of the operation.

To sum up. When we find that the ribs or sternum, or both, are distinctly moved up by each systole of the heart, I hold that this movement may be looked on as the heart's prayer for more room.

NOTE.—Since writing the above my colleague, Mr. T. E. Gordon, operated on the girl, and removed the cartilages of the third, fourth, and fifth ribs on the left side. The child bore the operation exceedingly well, and her general condition is somewhat improved, but it is too soon to form any opinion as to its ultimate effects.

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, January 1st, 1910. ² *Lancet*, July 4th, 1908.

THE BOARD OF TRADE SIGHT TESTS.

WITH TWELVE ILLUSTRATIVE CASES.

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In March and May, 1908, I published in the *Ophthalmoscope* particulars of eight cases of serious visual deficiency affecting responsible employés in the marine and railway services. Half of these were concerned with colour defects, and at that time I expressed the opinion that the Holmgren test carefully applied by properly qualified medical examiners was sufficient to detect all dangerous cases of colour blindness, although it might be necessary to supplement it by coloured lights capable of being partially obscured, so as to simulate fog, rain, or mist.

Since writing that paper, however, I have had experience of patients who could pass the Holmgren test without making any decided mistake, but who made serious errors when asked the colour of a light. The reason of this new development may possibly be found in the fact that all candidates who now present themselves for Board of Trade sight tests, have previously passed through a course of instruction in a navigation school, where sets of Holmgren's wools are kept.

As an example of this the following case may serve:

CASE I.

Towards the end of last year a navigation officer in one of the large steamship companies came for advice; he stated that he had passed his first examination three years before, his second two years later, but that he had failed to pass his third. With the Holmgren test no decided mistake was made, although it was done slowly; with coloured lights, however, white was called red and also green several times.

The lot of the Board of Trade lay examiners is not a happy one, as may be seen by reference to the "Regulations relating to the examinations of Skippers and Second Hands of Fishing Boats," "Exn. 1 (Fishing)," where it appears that they have to make a difficult medical diagnosis, and where faulty instructions are given in order to enable them to perform this impossible duty. It is stated on page 41 with reference to the form vision tests:

They also afford a means of detecting whether a candidate is suffering from that form of colour blindness which is caused by the excessive use of tobacco, and by illness or similar affections. All candidates who are suffering from colour blindness arising from causes of that nature will be found to be incapable of passing the tests for form vision.

The following case, in addition to illustrating the incorrectness of this statement, demonstrates the necessity for periodic examinations by properly qualified medical men.

CASE II.

A trawl skipper* has been under observation for some time, and now presents all the typical features of acromegaly. In September, 1909, while on full duty, the vision of his right eye

* This man died in the Royal Infirmary on April 1st, 1910. At the post-mortem examination a pituitary tumour (probably sarcomatous) the size of a large walnut was found, which pressed mostly on the left side. Death was due to erosion into the naso-pharynx and resulting left septic basal meningitis.