It is not known whether an attack of Y disease due to inoculation with icterogenic serum or plasma confers immunity against the Y disease occurring during arsphenamine treatment for syphilis.

In view of the identity of clinical, biochemical, and pathological pictures of X and Y diseases the final proof of the reality of two infective factors must rest in the end on the production of convincing serological evidence and the accumulation of more data on their aetiology.

[Since the above was written we have had, through the kindness of Dr. A. M. McFarlan, the opportunity of reading an unpublished paper by himself and Dr. G. Chesney on jaundice following the injection of mumps convalescent serum. These observers have put forward views which are in close agreement with ours but are based on other data and were arrived at quite independently. Dr. McFarlan generously offered to allow us to use some of the unpublished data in his article, but as publication of it is imminent we preferred to see both sets of data appear separately.]

We wish to thank the medical officers of the two hospitals where cases have been under observation for their co-operation and careful note-taking. To Lieut.-Col. H. L. Sheehan, R.A.M.C., we owe more than mere thanks, for the hypothesis which we have put forward was developed during a discussion with him. He is therefore in part responsible for some of the basic ideas here presented. We are grateful to Dr. A. M. McFarlan for reading our manuscript and for many most helpful suggestions which we have adopted. We acknowledge our indebtedness to Dr. Wilfred Pickles for checking his case records of infective hepatitis to determine the incidence of reinfection in his series and also for much useful information he has given us concerning this disease.

REFERENCES

- Beeson, P. B. (1943). *J. Amer. med. Ass.*, **121**, 1332.
 Bigger, J. W. (1943). *Lancet*, **1**, 457.
 Curtis, F. R. (1942). *Ibid.*, **2**, 351.
 Dible, J. H., and McMichael, J. (1943). *Brit. J. vener. Dis.*, **19**, 102.
 ——— and Sherlock, S. P. V. (1943). *Lancet*, **2**, 402.
 Edwards, L. R. L. (1943). *British Medical Journal*, **1**, 474.
 Findlay, G. M., and MacCallum, F. O. (1937). *Trans. roy. Soc. trop. Med. Hyg.*, **31**, 297.
 ——— (1938). *Proc. roy. Soc. Med.*, **31**, 799.
 ——— and Murgatroyd, F. (1939). *Trans. roy. Soc. trop. Med. Hyg.*, **32**, 575.
 Ford, J. C. (1943). *Lancet*, **1**, 675.
 Goodman, L., and Gilman, A. (1941). *The Pharmacological Basis of Therapeutics*, Macmillan, New York.
 Gutman, A. B., and Hanger, F. M. (1941). *Med. Clin. N. Amer.*, **25**, 837.
 Jones, T. R. Lloyd, and Maitland, F. G. (1943). *British Medical Journal*, **2**, 448.
 MacNalty, A. S. (1938). *Rep. Med. Off. Min. Hlth.*, London.
 Memorandum by Med. Off. Min. Hlth. (1943). *Lancet*, **1**, 83.
 Milian, G. (1934). *Briux. méd.*, **14**, 523.
 Mitchell, H. S. (1943). *Canad. med. Ass. J.*, **48**, 94.
 Morgan, H. V., and Williamson, D. A. J. (1943). *British Medical Journal*, **1**, 750.
 Naunyn, B. (1919). *Mitt. Grenzgeb. Med. Chir.*, **31**, 537.
 Pickles, W. N. (1939). *Epidemiology in Country Practice*, Bristol.
 Propert, S. A. (1938). *British Medical Journal*, **2**, 677.
 Ruge, H. (1927). *Arch. Derm. Syph.*, Berlin, **153**, 518.
 Soper, F. L., and Smith, H. H. (1938). *Amer. J. trop. Med.*, **18**, 111.
 Steiner, R. E. (1944). *British Medical Journal*, **1**, 110.
 Stokes, J. H., Ruedemann, R., and Lemon, W. S. (1920). *Arch. intern. Med.*, **26**, 521.

WHAT IS PSYCHIATRY? *

BY

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It has been my experience that, apart from an imaginative minority, most people have either had close contact with what is called mental disease through having seen a relative or friend attacked by some form of it, or, on the other hand, they have virtually no interest in psychiatry, but merely an ignorance enhanced by aversion and evasion. Close contact even for one day with a friend who has become insane is an experience which beggars any argument for the importance of psychiatry, and only those who have never seen mental disease at close range can shrug their normal shoulders with unconcern or with unruffled resignation assume the adequacy of the nearest asylum.

Whereas the usual physical ills concern the inadequate performance of heart, lungs, stomach, or some other organ in the service it renders to the rest of the body, psychiatric diseases must in the main still be defined in terms of inadequate performance of an individual human being *vis-à-vis* other human beings. Psychiatrists study and treat human beings who are inadequate or actually dangerous in their behaviour as

members of society; and so it happens that psychiatry as the study of disordered conduct is intimate to an almost suspicious degree with ethics, with cultural anthropology, with sociology, with metaphysics, with religion, with artistic activities—and this despite the fact that the behaviour of a human individual as a whole should be as soundly understood in terms of medicine as the behaviour or function of any of his component organs. To understand mental disease calls for medical art and science, but also for a wide knowledge of the society and culture to which each of us must learn to adjust.

Let me here offer you two ideas of cardinal importance to your understanding what psychiatry is: first, that the psychiatrist studies the function and the influence of mental processes and emotional states in the whole vast range from incurable disease to optimum health; and, second, that the psychiatrist seldom handles conditions which he can describe without reference to the demands of society upon the individual. As the functions of an automobile are not the functions of its carburettor or its gears, so the functions of man as a whole individual not only transcend but differ radically from the functions of any of his component organs or systems. If psychiatry has especially close connexions with the nervous system, it is quite natural; for the function of the nervous system is to co-ordinate, to integrate, to adjust, to harmonize, to administer the services of all the organs of the individual and to perpetuate his identity as a person through a finite but extremely long series of changing environments—dangers and difficulties and defeats, as well as resting periods, comforts, and delightful successes.

The Range of Psychiatry

I should not be satisfied with the definition of psychiatry as "that specialty of medicine which deals with mental disorders." Like a bad newspaper headline, such a definition confines while condensing and misrepresents by oversimplifying. Psychiatry deals also with the emotional and social life of man, not merely his reasoning mental operations. In so far as experience has shown you that emotional thinking is different from logical reasoning, the whole purview and range of psychiatry is evidently extended. Indeed, the province of psychiatry is the conduct of man, his reactions, his behaviour as an indivisible sentient being with other such beings. Until recently attention has been given only to grossly disordered conduct—to persons locked up in asylums; but now the field is far more inclusive because it reaches into the anxieties, the fatigues, the instabilities, the adjustments, the disturbances of normal everyday living, and also because it includes the effects of mental and emotional functions upon the component organs of the body as well as the effects of disorders of these organs upon the functions of the human being as a whole.

Let us make the position of psychiatry a little clearer by distinguishing it from neurology and from psycho-analysis. Neurology is the study of the nervous system; more specifically, the diseases of the nervous system. Obviously there is much overlapping between neurology and psychiatry when defects or diseases of the brain, spinal cord, and peripheral nerves are involved. But neurology points toward the functions of the nervous system as serving the efficiency of the individual machine, while psychiatry directs its attention to conduct—that blend of mental and emotional functions, dependent, it is true, largely upon the nervous system but involving more than the serviceability of that system to the individual as a whole. The location, structure, and function of the nerves and the paths taken by nerve impulses are the basic knowledge of the neurologist. The neurologist learns to detect where injury or infection is located along a large variety of nerve tracts. To the studies of gunshot injuries of the nervous system American neurology owes its beginnings during the Civil War. The location of a brain tumour, or the cause of a paralysis or loss of sensation due to nerve injury, is the task of a neurologist, not a psychiatrist. Most neurologists practise psychiatry because what the layman calls "nervousness" is not an affair of nerve tracts but is due to emotional conflicts or other psychiatric disturbances. Psychiatric disorders are much more numerous than neurological disorders.

Indeed, the psychiatrist's domain is almost bafflingly large, for it includes derangements of conduct or behaviour often

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discernible only in terms of the patient's relationships with other human beings in some given intellectual or cultural or social or moral system. And that presupposes a considerable knowledge of language, of customs, of tradition, of the culture and *mores* that surround the patient. For these derangements a wide gamut of causes may be responsible, and for their correction an equally varied assortment of treatments may be effective. Indeed, so complicated and numerous are the components of normal human conduct that it has taken years of study of abnormalities to arrive at even a tentative list of what had hitherto escaped recognition because of its presence in normal persons. As a figure of speech we say, "It sticks out like a sore thumb." In the same way normal behaviour remains inconspicuous until disease calls attention to its numerous components. Psychiatry has had to take the long road to recognition of a function through the conspicuousness of its absence.

Let me offer some examples of such functions of the personality suddenly made conspicuous.

A man receives a severe blow on the head. He may be dazed or confused, with or without knowing that he has lost touch with reality. Or he may lose consciousness or lose his memory for the events immediately preceding the blow. Thus we see that the normal man should know where he is, be conscious, and have memory intact.

A soldier may receive a bullet which traverses a part of his brain. The permanent after-effects may be a loss of initiative amounting to the general apathy of a purely vegetative life. Such placidity is not the normal condition of a man.

Alcohol in excess produces effects which would seem more remarkable if they were less familiar: a sense of self-confidence and well-being—as William James said, the mood of "saying yes to everything"—a loss of discretion and self-control, and in extreme cases sensation, emotion, and mental activity erased in stuporous and dangerously insensate sleep.

You will note that the phenomena are of the order of derangements of conduct of the individual as a person, and that it is sometimes hard to separate psychiatric symptoms from immorality.

A malnourished patient with pellagra exhibits irritability, emotional instability, and a sense of fatigue. A patient with the delirium which often accompanies high fever suffers from delusions, believing perhaps that his attendants are soon to be his assassins, and reacts accordingly. Human beings of either sex as they approach the fifties or sixties often pass through a year or so of depressed spirits and show a morbid concern for their health, but emerge on the other side of that too-little-recognized slough of despond with a serenity and good cheer which comfort in equal measure themselves and their friends. An elderly man whose hardened arteries supplying the brain give insufficient service there shows childlike temper tantrums and embittered pigheadedness.

A tumour of the frontal lobe may show its first symptoms in an inordinate weakness for making puns and jests of doubtful propriety. An infection of the brain with the spirochaete of syphilis often results in delusions of grandeur and self-importance which are no less disastrous for having an insidious and unrecognized beginning.

Now you will note that each of the symptoms I have mentioned relates to conduct, and yet each was different. Also, please note that these psychiatric symptoms resulted from conditions afflicting a previously well person, and are accompanied by physical or chemical events in the body which can be stated in terms other than those of conduct. There was a bruise on the scalp, a bullet hole, alcohol in the blood, inadequate vitamins, high fever, a reduction of sex hormones, a tumour, deficient blood supply in the brain, or positive Wassermann in the spinal fluid.

Psychiatry and the Subnormal

But psychiatrists must deal also with aberrations from normal conduct in persons who never were normal—with idiots whose heads never grow larger than a grape-fruit, with cretins whose brains have been irreparably handicapped by lack of iodine, with congenital epileptics, and other hereditary or congenital disease—but in each of these conditions the essential and pressing fact is that in terms of relationship with normal human beings these patients are obviously incapable of the expected conduct.

Thus far the conditions mentioned have involved, in the first place, disorders of reaction, conduct, or behaviour which are at the same time recognizable by characteristic changes in body

structure or body chemistry. These are the conditions more easily recognized—where function and structure are both at variance with the normal.

There remains a much more difficult group of diseases of which up to now we can merely say that conduct and types of reaction are disordered but no structural or chemical variation is known to accompany in characteristic fashion the all too obvious symptoms of social, moral, and intellectual inadequacy. In this category falls every gradation of disintegrated personality, from the uncontrollable manias of the madhouse to the trivial fears and the virtually harmless mannerisms or petty foibles of everyday life. In this category, too, fall most of the psychiatrist's cases—the schizophrenics with their characteristic inaccessibility and remote rejection of emotional exchange with normal persons, the manic-depressives with their unreasonable melancholia or equally irrational elation and overactivity, the feeble-minded, and the long list of psychoneurotics with their hysterias, anxieties, obsessions, and states of inexplicable fatigue and indecision. None of these conditions has any characteristic physical accompaniment which can be detected by the present methods of laboratory examination, and for these conditions the methods of the psychiatrist are only accurate description of the patient's reactions and conduct, together with an elaborate and meticulous history or narrative of the development of the disorder.

Psycho-analysis

It is here that we may describe psycho-analysis as one of the methods of eliciting from a patient the narrative and the nature of his intellectual and emotional growth. Psycho-analysis is only one of the methods and forms of interpretation of human conduct. It is one of the more illuminating methods used in psychiatry but not effective in curing many psychiatric diseases. It is an elaborate and relatively recent assembly of theories or postulates, based upon the study of all that the patient says in oft-repeated interviews with the analyst regarding his memories, his attitudes, his day-dreams and fantasies, his dreams, his emotional life, his sins and peccadilloes. There is an element of the confessional in such recitals and a relief obtained by discussing subjects previously repressed. Psycho-analysis postulates the immense importance of the unconscious and assumes a duality in human behaviour, a conscious, acceptable, idealistic force often in conflict with unconscious primitive animal desires; and psycho-analysis further attaches great importance to the successive and complete changes necessary in the growth of an infant from a completely dependent, amoral animal to an ethically passable adult. By many it is overrated as an exclusive form of treatment, but by even more it is underrated as a prerequisite for many types of treatment. Anatomy and physiology are not treatment, but they are applied in treatment. And certainly psycho-analysis is not a casual experience: even more than an abdominal operation it calls for a cautious operator whose knowledge and experience should exceed his enthusiasm to get to work. The emphasis which Freud attached to the role of sex seems at times fantastic, but, on the other hand, equally extraordinary would be the assumption that so essential a function throughout plant and animal life can be adequately understood or directed by pious moralizing, rattled evasion, and stern taboo. Let me read from the essay *On Instincts* by William Morton Wheeler, whom Whitehead characterized as the only man he had ever known who would have been both worthy and able to sustain a conversation with Aristotle.

"Similar considerations have led me recently to read some twenty volumes of psycho-analytic literature comprising the works of Freud, Jung, Brill, Adler, Ernest Jones, Ferenczi, Bjerre, and W. A. White, with the result that I feel as if I had been taking a course of swimming lessons in a veritable cesspool of learning. As I have not since had an opportunity to take a spiritual shower-bath you will understand why my remarks throughout this paper lack the customary refinement of a Sunday evening discourse.

"I should, of course, be wandering entirely off my beat if I attempted seriously to discuss psycho-analysis, but I cannot refrain from recording a few personal impressions of what I believe to be one of the most extraordinary and far-reaching contributions to thought. Having had a fling at nearly all the types of biologists and at the non-biologists who have handled instincts, I now see my opportunity to get under the skin of the psychologists. After perusing during the past twenty years a small library of rose-water

psychologies of the academic type and noticing how their authors ignore or merely hint at the existence of such stupendous and fundamental biological phenomena as those of hunger, sex, and fear, I should not disagree with, let us say, an imaginary critic recently arrived from Mars, who should express the opinion that many of these works read as if they had been composed by beings that had been born and bred in a belfry, castrated in early infancy, and fed continually for fifty years through a tube with a stream of liquid nutriment of constant chemical composition. To put it drastically, most of our traditional psychologists are about as useful for purposes of understanding the human mind as an equal number of dissertations on Greek statuary would be to a student eager for a knowledge of anatomy. Such a student at once learns that the object of his investigation, the human animal body, is very largely composed of parts offensive to the aesthetic sense, but this does not deter him from studying them as thoroughly as other parts. The typical psychologist, who might be expected to study his material in the same scientific spirit, does nothing of the kind, but confines his attention to the head and the upper extremities and drapes or ignores the other parts.

"Now I believe that the psycho-analysts are getting down to brass tacks. They have discovered that the psychologist's game, which seems to consist in sitting down together or with the philosophers and seeing who can hallucinate fastest or most subtly and clothe the results in the best English, is not helping us very much in solving the terribly insistent problems of life. They have had the courage to dig up the subconscious, the hotbed of all the egotism, greed, lust, pugnacity, cowardice, sloth, hate, and envy which every single one of us carries about as his inheritance from the animal world. These are all ethically and aesthetically very unpleasant phenomena, but they are just as real and fundamental as our entrails, blood, and reproductive organs. In this matter, I am glad to admit, the theologians, with their doctrine of total depravity, seem to me to be nearer the truth than the psychologists. I should say, however, that our depravity is only about 85 to 90%.

"In nothing is the courage of the psycho-analysts better seen than in their use of the biogenetic law. They certainly employ that great biological slogan of the nineteenth century with a fearlessness that makes the timid twentieth-century biologist gasp. But, making all due allowance for the extravagant statements of Freud and Jung and their disciples, any fair-minded student of human nature is compelled to admit that there is a very considerable residuum of accurate observation and inference in their accounts of the dream, of the perversions of the nutritive and sexual instincts, of the erotic conflicts and repressions, and of the surviving infantilisms. . . .

"To me one of the most striking indications that the psycho-analysts are on the right road is the fact that many of their theories have such a broad biological basis that they can be applied, *exceptis excipiendis*, to a group of animals so remote from man as the insects. This has not escaped Jung, who calls attention to the striking analogies between the nutritive caterpillar stage and human infancy, the chrysalis and the period of latency, and the imaginal butterfly and puberty in man. There are even cases of repression and sublimation as in the workers of social insects, and did time permit I could cite examples of multiple personality or of infantilisms—that is, larval traits which survive or reappear in the adults of many species. Insects undoubtedly sleep. Do they dream? If they do, what a pity that we shall never be able to apply the Freudian analysis to the dream of that symbol of sexual repression and sublimation, the worker ant!

"But these are trivial considerations. The great fact remains that the work of the psychiatrists is beginning to have its effect even on such hidebound institutions as ethics, religion, education, and jurisprudence, and that the knowledge that is being gained of the workings of our subconscious must eventually profoundly affect animal no less than human psychology, since the subconscious is the animal mind."

Psychology

Now let us turn to one other field close to that of psychiatry where differences from psychiatry may serve for the purpose of definition. As physiology is to the practice of medicine, psychology is—or should be—to the practice of psychiatry. In the history of medicine the investigation of the normal did not precede the study of the abnormal. The abnormal has revealed the normal as the exception illustrates the rule. Similarly, psychology as the study of the normal function of the organism has received much from psychiatry. Indeed, the whole method of experimentation in so far as it creates artificial conditions produces in some degree illuminating abnormalities. As a source of knowledge the abnormal precedes the normal.

There are psychiatrists who would be content to describe psychiatry as medical psychology, just as there are physicians who insist that medicine is physiology applied to disease. Though in theory psychology should play this role and thus

be the handmaiden to psychiatry, she is in reality a very green-haired girl with almost as much to unlearn as to acquire before she becomes indispensable to the psychiatrist. Patience rather than dismissal is indicated; for even now psychology, especially when well grounded in biology and physiology, is valuable. Already psychology gives real though limited service in mental testing, conditioned reflex research, localization studies, and in certain selective procedures like the Rorschach test.

A Summary

To summarize the foregoing: Human beings are not merely collections or assemblies of collaborating organs. They have functions and capacities characteristic of organisms as a whole and appropriate for individuals living in indispensable contact and collaboration with other human beings. What they do we call conduct or behaviour (and equally important, what they manage to keep from doing). Psychiatry is the field of study which concerns a very wide range of disorders, defects, or inadequacies of behaviour of these individuals. It has been wisely said that life's aim is an act, not a thought. In the same sense it is not merely mental phenomena that constitute the material of psychiatry, but that blend of instincts, emotions, thoughts, and feelings and physiological states which eventuates in conduct—in action or the inhibition of action. It is true that conduct will be affected by physical, chemical, or other disturbances in some part of the machinery of the body—e.g., bullet wounds, metabolic disorder, alcohol, bacterial disease. But it is also true that we witness disturbances for which we can find as yet no cause so simple and objective, where mood and motivation, emotions and instincts, and the faculties of adjustment to reality appear to be in conflict or disorder; and these derangements also are the task of the psychiatrist.

The Status of Psychiatry

Now for a few comments upon the status of psychiatry and I am done. Since 1880 medicine as a whole has profited immeasurably from two broad lines of study—bacteriology and cellular pathology. The one explained a host of diseases as due to invading micro-organisms, the other described in analytical terms of separate organs and organic disease the phenomena shown by sick people. There has been for the past fifty years, however, something approaching neglect of the patient as a person. Let me quote from a first-rate physician—Louis Hamman of Baltimore.

"To the specialist, psychiatry is another specialty operating in a contiguous but separate domain. To the internist, it is a vital and integral part of his work. Indeed, I find it impossible to formulate a clear expression of the relation of psychiatry to medicine, so intimately and inextricably are they bound together. The physician studies and practises psychiatry continuously, even when he protests that he has not the least knowledge of formal psychiatry. It is the chief instrument of his success, even though he may practise it unconsciously. . . .

"In spite of this growing importance it is the subject about which medical students know least and the one in which their training is most deficient. The reasons for this slighting treatment of psychiatry are many; I can mention only a few of the outstanding ones.

"1. The General Lack of Appreciation of the Importance of the Subject.—When I was a medical student psychoneurotics were objects of ridicule and contumely, not of serious study and sympathy. The patient with no gross lesion to justify his many complaints was neglected and avoided. The worst insult that could be cast at a fellow-student was to call him neurasthenic. After careful observation had established the fact that a patient had no organic disease professional relations were supposed to be at an end and he was dismissed with some reassuring remark as, 'There is nothing whatsoever wrong with you; your troubles are imaginary; go and forget them,' or even more curtly with a placebo and the ardent hope that he would never return. With the passage of years this brusque attitude has become somewhat softened, and yet essentially it is still the attitude of many physicians. The mind always seeks precise classification and is never more pleased than when experience can be snugly labelled. . . .

"In order to furnish tangible evidence of the important part psychiatric problems play in the practice of medicine I have reviewed the records of 500 consecutive patients who consulted me. To give the figures any value I must explain that my practice covers the whole field of internal medicine and that patients come to me or are sent to me chiefly for diagnosis. I have no reputation as a psychiatrist nor am I even suspected of having unusual interest or

talent in that field. Not one of the 500 patients consulted me on account of an overt psychiatric condition. . . .

"Among the 500 patients there were 116 (23%) without any discoverable organic cause for the symptoms of which they complained. In addition, there were 56 (11%) presenting minor organic lesions but with symptoms which could not possibly be explained by the lesions alone. In a word, one-third of the patients suffered solely or predominantly from functional disorders."

Strictly speaking, it might be stretching a point to say that all of these functional disturbances were due primarily to psychiatric disorders. Nevertheless, if you are willing to define the province of psychiatry as the broad field I have outlined, then surely the problems of these patients are of interest and concern to psychiatrists. For instance, a man otherwise well and competent suffers from very distressing digestive symptoms whenever he is worried, or for other reasons under nervous strain. Shall we consider this a psychiatric problem? I think we undoubtedly must, since here psychic influences play the chief role in disturbing the balance of the vegetative nervous system. What is commonly called the spastic colon invades the psychiatric field more prominently than it does the gastro-enterological.

With steady insistence psychiatrists have laid stress upon the whole personality of any and every patient—their own and those in every medical specialty. Psychiatrists, despite their isolation in asylums, despite inferior recruitment to their ranks and the taboo and horror associated with insanity, despite the time required for making their diagnoses, and despite their isolation from experimental methods and the fact that laboratory animals do not appear to develop psychiatric conditions (except Pavlov's experimental neurosis)—despite all these handicaps psychiatrists are nearer to adequate discharge of their duties than they have ever been before. For the first time man studies his own conduct dispassionately and in terms of cause and effect—not devils and disasters. Cannon's work upon the physiology of the emotions, the exceptional growth of neurophysiology, thanks to Sherrington and to new instruments of registering the changes of electrical potential in nerves, the stimulus of Freudian theory, of Pavlov's work on reflex behaviour, and the steady extension of scientific methods of study of psychiatric patients, are some of the factors in the progress of psychiatry.

Much remains to be done. Kolb of the United States Public Health Service reported that in 1939 \$200,000,000 was spent on mental diseases, yet not 1% of it for research. One child in every 20 in the United States will at some time of his life be in hospital for mental disease, and another child in the same 20 will at some time be psychiatrically disabled but not hospitalized. There are probably 6,000,000 feeble-minded persons of all grades in the United States, 80 to 95% at large in the population, 100,000 alcoholics and drug addicts, between 800,000 and a million mentally diseased, and 400,000 epileptics. There are more hospital beds devoted to psychiatric cases than to all other forms of disease. Ninety per cent. of the cost is at public expense. And in the face of the dislocation, loss, and sorrow in the families of the mentally disordered the statistician remains mute.

We are indebted to the Editor of the *Menninger Clinic Bulletin* for permission to republish this article.

Mr. Sydney Lamb was appointed secretary and organizer of the Liverpool Hospitals Council—now the Merseyside Hospitals Council (Inc.)—early in 1927, having already achieved notable success in Sheffield, where as secretary of the Hospitals Joint Council he increased the annual contributions from employees and employers by over £100,000 in five years. From this post of general secretary of the Merseyside Hospitals Council Mr. Lamb is about to retire. Starting in Liverpool with a rather small office, he worked indefatigably to make the "Id. in the £" principle an integral part of everyday life on Merseyside. To-day he controls a large organization which enables workers and employers to make their own contribution towards a complete hospital service—one of the most comprehensive in Britain. It assumes responsibility for the hospital service of a million Merseyside workers and their dependants, and has an annual income of £420,000. Among the many important posts held by Mr. Sydney Lamb was the office of general secretary and treasurer of the International Hospital Association, which took him to many of the great capitals and cities of both Europe and America. In 1941 he became honorary secretary of the British Hospitals Contributory Schemes Association.

OCULAR SYNDROME IN ONCHOCERCIASIS

BY

J. GRAHAM SCOTT, M.D., D.O.M.S., B.Sc.

Major, R.A.M.C.

Onchocerca volvulus (the blinding filaria) is commonly found in certain parts of West Africa and America. It produces keratitis and iritis. Strong, Sandground, Bequaert, and Ochoa (1934) found microfilariae in affected eyes. Hissette (1932, 1938) described choroidoretinitis, retrobulbar neuritis, and optic atrophy in cases of onchocerciasis. Luna (1918, 1919) had previously described keratitis punctata onchocercosa due to filarial toxins.

It is proposed to describe cases in which (1) oedema of the upper lid, (2) proptosis, (3) ciliary flush, and (4) oedema of the optic nerve occurred as unilateral phenomena in two patients with onchocerciasis, and to suggest that a lymphatic block directly due to microfilariae or indirectly due to filarial toxins (as in Calabar swelling) is an explanation of the four symptoms.

Case I

This case is that of a Gambian soldier, and is believed to be the first case of onchocerciasis described in a Gambian, it being uncommon among them. He was admitted to hospital on Dec. 31, 1942, complaining of a painful watering right eye. He had previously enjoyed good health and had experienced no trouble with his eyes until the day before admission. When admitted vision was 6/5 R., and 6/5 L. The right eye was watering and had a slight ciliary flush. The media were clear and the fundi normal. The case was diagnosed as early uveitis and treated with atropine 1% and hot-spooning 4-hourly. The next day the upper lid of the right eye was swollen and there was slight but definite proptosis.

Examination of the general and central nervous systems presented no abnormality on this or on any subsequent occasion, other than the eye signs to be described. The cerebrospinal fluid and white cells were normal. Radiographs of sella, sinuses, and orbits were normal. Blood films, day and night, revealed no microfilariae. A triple-centrifuged specimen of blood revealed a few *A. perstans*, a very common microfilaria in West Africa. A snip of conjunctiva showed no microfilariae. The Kahn precipitation test was positive (+). (This is a common finding in a yaws-infected population.) Blood pressure was 100/70. The urine had no albumin or sugar.

In five days the proptosis became less, but the right fundus showed blurring of the disk. Next day vision was 6/36 R., 6/6 L. The lower half of the right disk was covered with exudate. The oedema of the upper lid and the proptosis gradually faded during the next 14 days, but the right fundus slowly developed a low-grade oedema, with swelling of the nerve head of 1 or 2 dioptres. The upper temporal veins became veiled with exudate, and a few flame-shaped haemorrhages developed round the disk at 10 and 7 o'clock. The macula remained within normal limits till the thirteenth day, when it slowly developed a complete star reflex. Fields were as follows. Right: depressed, with enlarged blind spot but no central or other scotomata; 1/1000 white gave 5 degrees field; 5/1000 gave 25 degrees field. Left: normal. Colour test (pseudochromatic); two mistakes right eye; normal left eye.

19th Day.—Temporal veins less veiled and oedema of nerve head subsiding. Vision: 6/24 R., 6/6 L.

33rd Day.—Right fundus returning to normal. Fan reflex at macula persists. Vision: 6/18 R., 6/6 L. Fields show no central scotoma for 1/1000 white or 5/1000 colour. Patient has been having 1% atropine and heat t.i.d. to the right eye and pot. iod. gr. 5 t.i.d. by mouth. After a provocative injection of 0.45 g. N.A.B. the Kahn reaction was "doubtful positive," and a course of 10 weekly injections of 0.60 g. N.A.B. was given.

60th Day.—Vision: 6/5 R., 6/5 L. The left fundus had been normal throughout, and the right fundus showed slight cuffing of vessels on leaving the disk and a faint fan-shaped reflex at the macula. The haemorrhages had been absorbed, and only a slight fullness of the upper lid remained. On the 75th day a slit-lamp became available. One microfilaria was seen in the right and left anterior chambers. There was no K.P., and the right cornea presented a few nebulae in the substance of the cornea. Blood films showed no microfilariae by day or by night.

90th Day.—One or two microfilariae have been seen in both eyes on most days since first noted. The course of N.A.B. is now finished. Vision: 6/5 R., 6/5 L. The right fundus is within normal limits. Patient discharged.