

four years, regards the intracranial method (both subdural and intraventricular) as the most efficacious in the treatment of this disease. Since he has had no serious results following its use, he thinks it should be continued.

The present attitude of those most experienced in the treatment of nervous syphilis is best expressed by Southard: "While it has always been conceded that treatment would greatly help cases of diffuse and vascular neurosyphilis, the utmost pessimism has existed concerning the results to be obtained by treatment in cases of tabetic and parietic neurosyphilis, . . . and though it has been by no means settled in the minds of the various workers in this field as to what the ultimate results of such treatment will be, . . . still the majority of men who are treating these cases systematically feel very much encouraged."

THE PERSONAL EQUATION IN PSYCHIATRY *

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In one sense of the term personality may be said to be everything in insanity. This is not to say that insane patients never fit well into types; it simply means that the study of personal character, of responsive reactions to environmental stimuli, of conduct and expression, are and always will be of paramount importance in investigations seeking to establish the psychologic status of the individual. It means, furthermore, that the hardest things to extinguish in an individual are the things that mark him off from other individuals. It may be said that this is a matter of inference only, but it seems to be in accordance with the facts. There is nothing strange about this, since memory plays as large a part in experience as experience does in personality. Conscious memories form the principal line of demarcation between individuals, and with extinction or great reduction of conscious memory we have concomitant narrowing of the field of consciousness. To just what extent unconscious memory comes into play to enliven the stream of consciousness is very difficult to say. A greatly confused and apparently amnesic patient with hallucinations of hearing has some basis for the recognition of the voices which he hears. We say that he imagines the voices and this is true enough, but how can he imagine that which he is not aware that he has ever heard? As a matter of fact, memory, either conscious or unconscious, supplies the necessary factors of recognition and convinces him that the sense perception, albeit false and objectively unreal, is the sound of a human voice. To be sure, the patient may maintain that it is the voice of Deity or of the King of Siam, whom he has never seen, but this proves nothing except that he is familiar with the human voice or else that he attributes to Deity or the Siamese King a mode of expression somewhat different and resembling, for example, the notes of a pipe-organ or of a nightingale. For obvious reasons, the congenitally deaf do not hear voices. Whether they have or imagine that they have sense perceptions which stand to them for a hypothetical human voice is another question.

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Can personality be of etiologic significance in the determination of insanity? It can be, if by personality we mean that individual set or bias which creates a presumption in favor of either normality or abnormality in reaction to difficult circumstances, or in other words a fortunate or an unfortunate outcome of an adverse situation. The working out of the problem is a matter of personality, but what, forsooth, is personality? Modesty forbids an attempt at the colossal task of adequately defining this concept, but let us say that it has to do with aptitudes both inherited and acquired (provided there is such a thing as an acquired aptitude), with knowledge and its expression, or so to speak with knowing what to do and how to do it. These things enter into personality, which is made up largely of habitual modes of thinking, feeling and acting, of habitual ways of looking at things and doing things. What is it about the person that causes him to become insane? Not to overstate the case at all, if we could answer that question we would be flooding the field of psychiatry with such a light as shines now only on the exact sciences. As fast as we are able to introduce factors of precision, we will discard the speculative and the inferential, but with such a wealth of speculative material at hand we are sometimes in danger of forgetting that surmise and conjecture cannot fill the place of well grounded categorical affirmations. The field of fancy is filled with devious paths which do not always lead to the straight and narrow exit.

We cannot but be impressed by the tyranny of personality when we compare the introcentric and subjective precocious dement with the exocentric and objective maniac, but after all we cannot tell which component in the etiology has the greater effect in determining the psychosis, whether the personal make-up or the hypothetic disturbing factor, though very likely the former rules. In other words, given a set of similar adverse factors in two persons, each will respond with the psychosis for which the stage was set in the beginning. Now perhaps this is true and perhaps it is not, but at any rate it is a fascinating conjecture which leads us dangerously near to determinism. If certain people are to become insane and are to become insane only in a certain way, what is the use of all our therapeutic endeavor? A liberal psychiatry can hardly rest under the restraint of such freezing philosophic dogma.

It is sometimes very plausibly said, even by the laity, that there is nothing strange about a given person becoming insane, because he always seemed like that kind of a person, the insanity being in character or keeping, so to speak, and simply an exaggeration of existing traits or tendencies. Lay observation is sometimes acute, though without reasonable criteria as to causation. It often partakes of the mysterious and of the trivial. While it is impossible to deny that grief, worry, sunstroke or change of life may have something to do with insanity, it is highly improbable that they will cause it in the absence of the necessary determining factors. Why do some men with disease of the heart or the lungs or the liver become insane while some other men with disease even of the brain do not become insane? It is indeed astonishing what gross insult the brain will sometimes tolerate without resulting mental disintegration, and this brings us to the very interesting question as to whether the essential adjustment to adverse factors is made by the brain or by the mind or by both together.

The assumption of dualism in operation leads us to look for psychophysical parallelism, often a barren search, it must be confessed, but with points of reasonable expectation. The idea of effect without cause is abhorrent and a rational dualism seems to extricate us from the dilemma with which we are confronted, if we assume that physical injury or disease can cause only physical disorder and that insanity, therefore, is purely psychogenic in origin. It spares us the necessity of supporting the difficult thesis of materialism on the one hand or of idealism on the other, and allows us to bridge in some sort, at least, the gap between matter and spirit. This naturally calls for some sort of reactive mechanism between the two which we will not attempt to define, but which we hope some day to see elucidated. Any physical cause to be effective in the production of insanity must in some way affect the flow of ideas and we do not know how physical states can influence the flow of ideas, though they doubtless can do so very profoundly. We prefer to think of man as something more than a mere congeries of biologic adaptations, and yet we must not lose sight of the fact that perhaps the greatest achievement of modern psychiatry is to be found in the biologic point of view. I refer, of course, to the point of view that regards the human organism as a whole, both ontogenetically and phylogenetically, and takes account of all discoverable factors. To the extent that the psychiatrist keeps in mind all the elements of his problem, he will probably succeed in justly estimating both the cause and the character of the reaction. Fallibility of judgment is inherent in the human mind, which is no very dependable instrument at best and, therefore, to be used with due reference to a fairly large percentage of probable error.

ABSTRACT OF DISCUSSION

DR. WILLIAM O. KROHN, Chicago: The suggestion that if we could know the personality we would know something of the causes of the insanity, is very good. We do know that certain types of personality predicate what the insanity will be if the person becomes insane. In taking the reaction tests as to the speed at which the nervous impulses are transmitted from the brain, we know that if one individual becomes insane he will have a certain type of insanity, while another will have, say, the slowed up type of insanity. I found that carried out in the study of children in the public schools, where we find two distinct types: the explosive motor type and the sensory type. One child is bubbling up to express himself; he is always ready to say something whether he knows what he is going to say or not. Then, there are the others of the sensory type who hear everything, but are rather slow to express themselves. We know that the motor type of boy, if the proper environment for his development is not available, will develop a certain distinct type of insanity, while the other type, who holds himself in, receiving impressions and never able to express himself, will manifest another abnormal, distinct type of personality. Through the environmental and personal education we can at least determine to a large degree what type of personality the individual possesses, and in large measure overcome the handicaps with which the organism is invested when the individual is born.

DR. JOSEPH BYRNE, New York: The great objection I have to discussions on psychiatry and on questions pertaining to psychoanalysis and psychology in general, is that the audience do not seem to grasp them. That is a great loss to the psychological study of medicine because we come here to learn. The doctor has raised pertinent questions in regard to personality. In the study of any question connected with neuro-psychiatry, I want to know first what the personality is.

There is an objective and a subjective personality, but what do we mean by the personality and the modifications of personality? The second question is the dual hypothesis, which I was rather glad to hear the essayist mention. We are taken up altogether too much with mechanistic conceptions in modern medicine. Dr. Haldane, one of the foremost physiologists of any age, gave mechanistic views a severe blow. He ridiculed the mechanistic conception as having too much weight in our physiologic and biologic laboratories. If there is any one conception that brands a man as being philosophical in his tendencies, it is the capacity to consider things as a whole and also as parts. As to bridging the gap between matter and mind, I do not think the doctor would succeed in that. Men in the past have tried to fathom that question and have absolutely given up all attempts at trying to bridge the chasm.

DR. RALPH REED, Cincinnati: One point brought out in the paper has always been interesting to me, and that is with regard to the relationship between the physical origin and the psychogenic origin of mental diseases. In psychiatry there seem to be two schools with distinct demarcation between them, one of which, when considering any mental disease the etiology of which is in doubt, shows an inclination to insist that the origin must be physical, the other showing a tendency to seek for some psychogenic origin. Two or three striking facts bear on both phases of this question. One is the tremendous destruction of tissue seen in many cases of organic brain disease, with very little mental change. Sometimes this is so striking that it is absolutely astonishing. On the other hand, we see cases in which a very slight amount of toxin introduced into the system is productive of profound changes in the individual's character.

DR. ALBERT E. STERNE, Indianapolis: One of the most dangerous things teachers and psychiatrists do is to promulgate a doctrine which the laity will gladly take up, even more than it already has, to wit: That a mental complex can stand on its own feet. If we are to be practical teachers of medicine and practical men in our consulting rooms and at the bedside, we must stand squarely on the basis that presupposes and establishes a fundamental organic condition for mental expression. It is obvious that there are psychogenic causes at times, such as emotions, particularly the emotion of fear, which produces changes in our mental attitude and expression. Nevertheless, we must hold fast to the fact that there are changes in the brain of a cellular character which are the fundamental causes of what are commonly termed mental diseases. I believe strongly in the materialistic side. While recognizing the value of psychogenic factors in the production of this materialistic phase, it is a mistake to think that the so-called physiologic changes which are shown by individuals are independent of organic changes in the cells. I do not believe that that hypothesis can be maintained. If we have gotten anywhere in the teaching and practice of psychiatry it has been by holding firmly to the fact that there is an organic basis for these diseases.

DR. HAROLD N. MOYER, Chicago: An old philosopher once said that when the understanding failed we used a word. I have enjoyed the discussion that occurred here because of the facility with which some of my colleagues can use words. I have not that faculty. As to the psychogenic and the somatic origin of mental disease: Mental disease is not tangible. It is not a thing purely. It is a human concept in the mentality of the psychiatrist. The facts are perfectly clear that some mental disorders are due to somatic and some to physical causes. Another equally obvious fact is that some are psychogenic in origin. We ought to announce that positively and stand resolutely on that proposition. Then again, there is a third group of disorders that are mixed—they are in part psychogenic and in part somatic and physical in origin. It is the business of the practical psychiatrist, the man treating mental disorders, to unravel the tangle in the case, and if he cannot have a mental grasp of the physical and mental side of his patient, he is not fit to treat him. In the practical treatment of psychiatric disorders this problem is presented in every individual case, and the success with which you solve it is the success with which you meet the indications in that particular case.

DR. BEVERLY R. TUCKER, Richmond, Va.: I am of the opinion that we have not laid enough stress on the hereditary factor in mental diseases. The doctor spoke of inherited aptitudes. I had occasion at one time to investigate the manufacture of artificial eyes, and it was found that it could not be very successfully carried out in this country without the importation of Bohemians trained for generation after generation in this particular work. I believe that it is an inherited aptitude, and that the simpler aptitudes involving the motor factors are the easiest to carry, and then we come to the ones below. I do not believe that people "go" insane. I believe that when physical disease is induced, for instance by toxemia, as by alcohol, this releases inhibition and then we see the individual stripped of all his veneer, and the man who becomes maniacal under alcohol has a maniacal tendency. We do not lay enough stress on the inheritance factor. I am of the belief that neither poison nor anything else can make a person insane unless he has an inherited tendency. In other words, a normal mental mechanism remains a normal mental mechanism, and the only influence that disease has on it is to cloud it. Any well-formed syndrome that is manifest has always been present. A person does not "become" insane; he has always been insane, and some particular determining factor makes that apparent.

DR. LAWRENCE B. PILSBURY, Lincoln, Neb.: I purposely avoided going into personality very much; personality is too big a problem. We do not know what personality is, we simply know some of its manifestations. As to somatic and psychogenic causes, they are very hard to separate. It is as hard to separate the potentially somatic cause from the potentially psychogenic cause as it is to bridge the gap between the body and the mind. Dr. Sterne speaks of fear. We do not know what fear is, but we know some of the manifestations of fear. Probably some of the ductless glands have something to do with fear. Dr. William James, in elaborating his theory, points out the fact that we are, so to speak, afraid because we run; that we do not run away from an object, a bear for example, because we are afraid. We first begin to run—we first react—and then afterward we realize that we are afraid. Of course, there is simply an idea or an emotion with a physical expression or manifestation, but we cannot have physical reaction without a cause, and the cause in this instance is a stimulus, probably an optical stimulus—we see a bear and begin to run, and we are afraid. The whole thing has a material and physiologic basis, and how to separate the emotion of fear from its manifestations I do not know.

Dangerous and Harmless Color Blindness.—In a recent investigation made by the United States Public Health Service, an important distinction was made between persons who are only slightly color blind and those who are dangerously color blind, that is, unable to distinguish at all times between red and green. The results of the investigation form a working basis on which examiners may discover members of the latter class and exclude them from all government positions in which the reading of colored signals is a part of the work. It was found by various tests that the latter class includes persons who are able to see three or fewer colors in the spectrum, those who see more than three colors but have the red end of the spectrum so shortened as to prevent the recognition of a red light at a distance of 2 miles, and those with a central scotoma for green and red. In making the tests, the health service officials used the Edridge-Green color lantern in preference to colored yarns. In the course of the tests, 1,000 persons were examined by means of the lantern, in order to determine both its value and the effect of refractive conditions and lesions of the eye on color perception. The examinations also revealed the fact that color blindness occurs in about 8.6 per cent. of men and 2.2 per cent. of women, if we exclude those who are able to distinguish five colors in the spectrum. Among workers in occupations requiring the ability to recognize colored signal lights, dangerous color blindness prevails to the extent of 3.1 per cent. among men and 0.7 per cent. among women. It appears the most frequently in eyes affected with mixed astigmatism, and the least frequently in those that show no refractive error.

SOME VITAL PHASES OF FRACTURES OF THE JAWS*

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The subject of fractures of the jaws is one that has attracted the attention of medicine since the days of Hippocrates. It also is a subject that was of considerable interest to dentistry long before it became a profession. Indeed, many of the principles laid down by Hippocrates can be used today with a moderate degree of success. It was Hippocrates who first originated interdental ligation. It was also Hippocrates who condemned the use of bandages alone as a procedure in the treatment of fractures of the jaws.

In presenting the subject of fractures of the jaws at this time, we shall touch on only two or three vital phases of the subject. The first phase which we shall attempt to discuss will be the process of repair. We use the word "discuss" advisedly, because in our present state of knowledge of the subject, we can only discuss it. We are not in a position to make any dogmatic statements as to just what takes place in the process of repair of bone.

Just what takes place in the behavior of the tissues in the process of repair of bone is a question offering a diversity of opinion. There seems to be an antagonistic state of opinion about the theory of bone growth. There are two schools that are contending for the maintenance of their theories along this line: One contends that the periosteum is a limiting membrane without the property of osteogenesis; the other maintains that the periosteum is an osteogenetic membrane and can go on functioning, developing and nourishing new bone.

Havers, in 1692, gave the first accurate account of osseous structure and described the periosteum as simply a connective tissue, limiting and vascularizing membrane.

Antoine de Heyde, in 1684, made some observations on frogs and determined that callus was formed by calcification of a blood clot extravasated around broken bone ends.

In the middle of the eighteenth century, Duharnel brought out the generally accepted theory of the function of the periosteum. His view was that the periosteum became thickened and succulent around a fracture and by pushing the new tissue in among the fragments it formed a callus. In his experiments, he discovered a layer of cells lying next to the bone. To this layer, he gave the name cambium layer. This layer of cells between the true periosteum and the bone is recognized in the bone work now being done in Europe.

Macewen¹ is emphatic in the statements that the function of the periosteum is simply a limiting membrane and does not have the property of osteogenesis. He made many experiments on dogs. In these he seems to prove that the periosteum does not produce new bone. In many instances, he reports that the whole radius was removed, leaving the periosteum. He finds in these cases that after several weeks no new bone is formed. In his experiments, he finds no place where the periosteal flaps produced new bone. He also finds that where the periosteum was

* Read before the Section on Stomatology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Macewen, Sir William: *The Growth of Bone*, New York, The Macmillan Company, 1912.