It is to be noted that 10 out of the 14 cases showing the difference had thick arteries (all except Nos. 8, 17, 21, and 23), or of all the 13 cases of the series having thick arteries 10, or all but 3 (Nos. 5, 13, and 14), showed the difference, a much larger proportion than that which obtained in the total number of cases (14 out of 22) all of which had, of course, aortic incompetence. Further, in the 14 adult cases 11 showed the difference, whereas by contrast it was observed only in 3 of the 8 children, in none of whom were any arterial changes found. These two points suggest very strongly the arterial origin of the phenomenon.

In regard to the relationship of the degree of pulse pressure to the arm-leg difference, there was no correspondence between the two. Taking the 6 highest pulse pressures, in 4 of them, Nos. 2, 3, 11, and 16, there was a marked difference, whilst, on the other hand, in the 2 others, Nos. 10 and 14, no appreciable difference was found. In 3 out of 5 cases in which it was tried, the difference of pressure was abolished by repeated recompression, which again is as we have seen in favour of the arterial explanation, and is at variance with Hill's finding aortic regurgitation.

It will be seen, if my results be compared with those of the various writers on this subject that they are similar to those of Heitz, but differ from those of the others, and it may be pointed out that Heitz's conclusions appear to be based, to judge from the published records, upon a considerably larger number of cases than those of the other observers.

Whilst of course I freely acknowledge that the limited number of cases upon which the present paper is based is insufficient to form the basis of general dogmatism, it is certainly quite sufficient to show that the phenomenon is nothing like a constant sign of aortic regurgitation. Finally, I would submit with some insistence that future observations should include in each case a note upon the condition of the arteries, an omission as to which has deprived past records of much of their value.

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An Address

ON

ELEMENTARY PSYCHOLOGY IN GENERAL HOSPITAL TEACHING.

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In August, 1920, I was instructed to examine a woman aged between 60 and 70, and report on her mental and general condition; she had had a stroke in 1912 and another two years later. She was bedridden. Both arms and legs were strongly flexed, the knees nearly touching the hips, the heels the hips, and the arms were crossed over the abdomen; she had no control over bowel or bladder; her articulation was very defective, resembling an exaggerated mumbling lisp; orientation for time and space was hopelessly poor; she said she was 43, and that it was the year 1909; her memory was quite unreliable, her ideas extremely limited; she knew nothing about her affairs except that she got a certain sum a week from a deceased sister, and had been robbed of her furniture, and in making these statements she exhibited tearful but short-lived emotion.

I had no difficulty in making a report. In a subsequent letter I was asked whether I could give an opinion as to the time during which this patient had been incapable of managing her affairs, and whether there was any ground for forming an opinion as to what the mental capacity of the patient was likely to be after the seizure in 1912.

In trying to answer these questions I realized that my knowledge was very limited. It could be put into two statements: (1) After a stroke there is mental weakness, which may be of so slight a degree as to be unnoticed, or may amount to well marked secondary dementia, where the patient has returned to second babyhood; and (2) that there is a question how far aphasia meant intellectual incompetence. I answered that it was impossible to form a reliable opinion.

So I turned to our textbooks and to what medical literature I had time to consult. Some simply mentioned the question of examination of the mental condition of our patients, some gave a rough outline, a few lay emphasis on the "cerebral" features of arterio-sclerosis, by which I presume they meant "mental" or "psychic" features. This is the "arteriopathic dementia" of the alienist. It is interesting and instructive to note how even some of our best textbooks do not refer, or refer in an inadequate manner, to the difference between cerebral physiology and psychology. The textbooks on mental diseases are not included in this statement. Many of our manuals of medicine and monographs on the diseases of the nervous system consider elaborately the questions of cerebral pathology and of aphasia; to illustrate the latter subject the pages abound with diagrams which, rather unfortunately, recall from our unconscious memory the forty-seventh proposition of the first book of Euclid, and we are apt to associate with these diagrams the same childlike faith in the definiteness of proof and of absolute reliability that we learned in our boyhood to associate with the famous right-angled triangle; normal or morbid psychology is not touched upon.

Charcot, in his classical clinical lectures, takes up a very interesting attitude: the study of cerebral haemorrhage, he says, forms an introduction to the study of diseases of the encephalon. The sudden tearing of the tissue realizes in some degree the simplicity sought in experiments on animals, but he omits the mental condition. His further lectures were unpublished.

Our later textbooks and manuals on insanity do supply the want; whether in an altogether satisfactory manner or not is a legitimate subject of debate, but the effect of this separation is that the student and most medical men do not attempt to make even an elementary psychological examination of a patient, unless this patient is actually insane, and then only so far as to ascertain whether insanity exists or not. But a patient's mentation is a function of his brain; this function is continually being carried on; it is a function—not perhaps from a vital point of view, but certainly from a social point of view—which is incontestably the most important, and it should not be relegated to an odd half-dozen of lines.

Cerebral physiology is yet very incomplete, and so we should teach the elements of psychology to the student as part of the clinical examination of the most important function. At present it is left to the native wit of the doctor to size the mentality of a patient. Should we not train him in scientific methods? Would we give up our scientific and regular, orderly, means of physical examination because the native wit of Hippocrates enabled him to do so much? Let us rather correlate cerebral physiology and psychology to make as complete an examination of the functioning of the nervous system as our present knowledge allows, and obtain practical aid in the examination of our patients.

An examination of some of our excellent manuals on clinical examination and case-taking showed the same deficiency; the reflex movements of the big toe were strongly in evidence, but the powers of memory, of ideation, the depth of emotion, the occurrence and kind of dreams, and the bias of mind, the powers of expression, of calculation, were passed by unnoticed or barely noticed; Hutchison and Rainy in their *Clinical Methods* give a page on which is printed a special scheme for cases presenting mental symptoms drawn up by Henry Head for use in the wards of a general hospital. A student, however, is told in other places to practise examination on healthy lungs, hearts, urine, etc. Why should he not practise a little normal psychology, and so be better fitted to examine and recognize psychological abnormalities when they present themselves?

A student should have a certain amount of both normal and morbid psychological training before going to the asylum; he will be able to benefit by his training in that

institution; and, in his final undergraduate year and ensuing years of practice, he will be less apt to confuse psycho-neurosis with malingering, congenital defect or bodily disease, and so be enabled to give the proper and right treatment.

A revolution is taking place in this subject of psychology; it may be said to have begun with Freud of Vienna roughly at the commencement of this century. Freud was a physician and was led to his theories by the study of mental affections, but his theories concern a universal problem of psychology. It would be impossible even to attempt a brief explanation of Freud's "unconscious mind," "suppression," "censorship," "conflict," "psycho-analysis," "interpretation of dreams," etc. We should be led into an arid discussion of priorities and interpretations, but undoubtedly much merit and noteworthiness should be attached to his mechanism and the nature of his "mental conflict." Side by side with this psychological change is the great advance in cerebral physiology due to the work of Henry Head and his school in London. Thirdly, we have the enlightened and progressive study of the psycho-neuroses during the war and afterwards. And, lastly, we have the endeavour to correlate all three, as will be seen in the book, *Instinct and the Unconscious*, lately published by Rivers of Cambridge; he tries to show the various aspects of the psycho-neuroses as biological reactions. I shall make no attempt to explain the changes and advances in psychological theories, with the one exception of emphasizing the importance of instincts. The recognition of the nature, number, and power or influence of instincts has perhaps been the greatest change and advance; these instincts have been examined with the greatest care and exactitude, and have been defined with the utmost circumspection. Freud insists on the impulsive, demoniac, illogical nature of much of human thought and the very partial and inadequate way in which consciousness reflects or represents the workings of these impulsive forces, which seem to be the driving power of life. Others have taken up the question, have enlarged the boundaries, and have built an edifice on a surer, steadier, and broader base.

Now let us consider for a moment the later cerebral physiology. Head showed that two forms of sensation—epicritic and protopathic—were present in sensory nerves; in the healing of a cut sensory nerve the protopathic sense returned long before the epicritic; the protopathic is concerned with somewhat painful or pleasurable sensations of heat or cold; it is vague and diffuse; it is conducted by the spinothalamic tract to the optic thalamus. The epicritic is much more discriminating; it is exact, differentiates, and the fibres travel by a separate tract to the cerebral cortex. The optic thalamus is the old brain. The neothalamus or cortex is later; it increases in size as we rise in the stages of evolution; it is with the cortex that the epicritic is connected. There are instincts of the protopathic type, and, as summed up by Rivers, they have the "all-or-none" principle in reaction:—

1. There is an absence of discrimination, of appreciation, or of graduation of response;
2. They have the character of reacting to conditions with all energy available;
3. And the character of the responses is immediate and uncontrolled.

These characters all hold good in large measure of the activity of the optic thalamus, the essential nucleus which Head and Gordon Holmes have shown to be the central representation of the protopathic aspect of peripheral sensibility and the essential basis of emotional reaction. The mad flight for safety of an animal is of this type; the instinct reaction for self-preservation is immediate, uncontrolled, with all energy available, and without discrimination; it is a panic. We need but to keep our eyes and ears open in everyday life to recognize examples; books of travel and the better class novel abound in them.

Or the opposite: The mad rush of aggression, bearing down all opposition, regardless of danger, is of the same type. The chance of success in both lies in thoroughness and completeness. In the better class of man we have an instinct reaction of self-preservation in what Rivers calls the "manipulative activity" reaction; the man at once instinctively becomes cool, quick-witted, without sense of fear or danger; he gets wounded and he feels no pain; each highly complex difficulty is met with dis-

criminating quickness of thought; this is a cortical or epicritic instinct reaction for self-preservation, and its success depends on the purity of its cortical nature. If a man "loses his head"—that is, if the epicritic nature of the instinct reaction wanes and the protopathic type interferes—his risks are quadrupled; he has the blind rage of the optic thalamus without its suddenness and full energy.

A good example of the contrast between the two is found in George Eliot's *Romola* (Chapter XXXIV) in the conflict between Tito, young, well nourished, selfish, and with a cool scheming brain, and Baldassarre, old, exhausted by exposure, privations, disease, with fast failing mental powers; the sudden impetuous leap of the latter and his secondary collapse correspond very closely with Rivers's description. *Romola's* interview with Savonarola in Chapter LIX is a fine instance of a good, educated brain in a noble character acting under the strongest conflict and emotion, but always held in control; a weak cortex and weak nature would have gone into hysterics.

It is not difficult to see the resemblance between a protopathic reaction and a sudden outburst of an hysterical fit, or of mania, and a resemblance also to those cases where soldiers have suddenly taken to flight even into open danger.

Again we are not allowed by the public press just at present to forget that an animal may try to escape by sudden immobility or "shamming dead"; it can be rolled over, touched, and yet not exhibit the faintest movement; it is apparently without feeling; the paralysis, anaesthesia, mutism of hysteria may have the same origin.

In this way Rivers endeavours to correlate the psychology, the latest cerebral physiology, and the psycho-neuroses; the instincts of the animal of the optic thalamic type become modified in those animals whose cortex has increased in size and complexity; in man, under the stress of war or civil danger, functional diseases in their manifestations hark back to his optic thalamic ancestor.

In passing, I may remark that the war has done two things. Freud made the sex instinct the central and most important factor; he enlarged the use of the word "sexual" to a perfectly absurd extent, and broke through the plain use of words and of facts. The older psychologists were jealous of his innovations and held up to scorn, contempt, and ridicule Freud and his sex theories. The first iconoclastic action of the war was to knock to pieces the supremacy of his sex instinct; the second was to confirm the truth of his mechanism of the unconscious, suppression, psycho-analysis, sublimation, projection, etc. Comparatively few of the neurasthenic soldiers showed any predominant sex instinct; they led the ordinary sex life and never worried about it, except when they got some venereal disease, but the vast majority showed "danger"—that is, "self-preservation and herd instincts," "suppression," "conflicts"; they were treated on these lines and cured; so that Freud's mechanism was established, but his "sex instinct" theory, which might be more in accordance with fact in the highly artificial and effete civil life of Vienna, had to come down from its pinnacle and take its place with the two other main classes of instincts—namely, that of "self-preservation" and that of the "herd."

Again, there has been an enormous increase of public interest in psychology; lay practitioners in psycho-analysis are already beginning to swarm in London; the machinations of many, I am afraid, make for evil, and pander to the erotic vacuity of fashionable life. These charlatans will spread to provincial towns, and will soon be with us, and be adopted by the neurotic cranks of the district. Books are published as scientific treatises, whose illustrations and stories would delight the heart of the prurient pervert; but the higher class papers and reviews have also taken it up in a more legitimate manner.

A book on the psychology of employment, published recently in America, shows how the Americans are open to receive new ideas and improve their methods, and are not above taking lessons from any form of study; it deals with intellectual capacity generally, and emphasizes the two varieties: (1) General intelligence—capacity to benefit by experience and error; (2) specificability.

A third reason why the profession should not be ignorant of the subject is the immediate need for the treatment of the large number of war "neurasthenics," and the still larger number—proportionately increasing as the true

"shell shock" gets well—of the degenerate, work-shy, malingering borderline case, who did no work before the war, as little as possible during the war, and do not intend to work after the war. The Ministry of Pensions has taken the responsibility of these men; and it is our duty to educate ourselves and the public as to how to deal with them; they do much harm to our wounded and war invalids. The war found us well prepared as regards the prevention of infection, moderately prepared as regards the treatment of wounds, but in hopeless ignorance as regards the prevention and treatment of psycho-neuroses. We tolerated before the war in a supercilious manner some practitioners who specialized in this class of patient; a few—but still too many—of these were cranks themselves or quacks who battered on credulity and gave the bad name; but we ourselves were ignorant; we were guided by no scientific principles. The older surgeon looked with contempt on the bonesetter; he has now systematized the knowledge and experience of the bonesetter, and benefited the patient; the analogy is not too strained.

My object is to advocate the introduction of a simple elementary study of psychology, normal and pathological, into the wards of a general hospital, in order to formulate and systematize the instruction that is already given in a somewhat spasmodic and irregular manner; to train students and prepare them so that they will be able to benefit more fully by their attendance in the asylum, and be ready to take up this aspect of their professional life—the examination of a patient for responsibility of his actions, for testamentary capacity, and for the hundred small incidents that occur in our daily professional life, and the treatment of the minor mental ailments that form such a large part of general practice.

OBSTRUCTION BY A BAND IN A LARGE SCROTAL HERNIA.

BY

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INTESTINAL obstruction in a hernia, from causes other than constriction of the contents at the neck of the sac, is not of great rarity—I have heard of two such instances in the past year—but the following case presents features of unusual interest:

In September, 1919, I was asked by Dr. J. Thorpe Reckitt to see a case, apparently of strangulated inguinal hernia. The patient was a man, aged 69 years, who had a left inguinal hernia of remarkable size; its maximum length was about twelve inches and its circumference about eighteen inches while the patient was lying down in bed. The hernia had been present for forty years, and for many years—for how many the patient was unable to say—it had been irreducible and of its present size. No truss had ever been worn, but, in spite of its magnitude, the hernia seemed to have caused him singularly little inconvenience. He was able to lead an active life and attend to his business right up to the present illness. Some few years ago the swelling had been tapped by a medical man, presumably under the impression that the scrotal swelling was a hydrocele. No fluid was drawn off, but the patient was unable to say whether anything was injected into the sac.

His illness, which may be said to have started three days before I saw him, commenced with pain and tenderness in the hernia, followed by absolute constipation, neither faeces or flatus being passed. The symptoms at first were apparently not severe, so that he did not send for Dr. Reckitt until the third day, when the pain had extended to the lower part of the abdomen and he had commenced to vomit. When seen during the evening of that day his condition was very grave; the vomiting had persisted and he was then bringing up small quantities of foul brown fluid at frequent intervals. The pulse was not very rapid, being 100 per minute, but was of small volume; the tongue was furled but moist and the eyes were decidedly sunken. The lower part of the abdomen was tender and rigid, but, owing to the presence of much fatty tissue it was not possible to say if there was any distension. It was considered that the hernia was strangulated, with probably gangrene of some of the

contents. As it was thought that the patient's life might possibly be saved by relieving the obstruction and tying in a Paul's tube it was decided to operate.

Operation.

An anaesthetic was given and the sac exposed and opened in the usual way. The contents were chiefly small intestine, with a portion of the omentum and a small amount of foul blood-stained fluid. The neck of the sac was very large, and there was no difficulty in passing two fingers through it into the peritoneal cavity; the intestine showed no evidence of constriction, and it became certain that we were not dealing with an ordinary case of strangulated hernia. The omentum was ligatured and excised to allow of investigation of the bowel. It was estimated that about half the total length of small intestine was present in the sac; it was but slightly distended and the serous surface was hyperaemic. At the lower part of the sac a coil about 12 in. in length was found to be black and gangrenous. This was caused by a well-defined, rounded, fibrous band attached at each end to the mesentery, crossing and constricting both the proximal and distal ends of the coil, but having no attachment to the intestine. The gangrenous portion of the gut was sharply defined by the line of constriction, which was very tight, and, in addition, the whole of the affected coil was twisted through an angle of about 180 degrees. The band was situated at least 6 in. below the level of the external abdominal ring, and there was certainly no obstruction at the latter situation. The patient's condition was too bad to allow of a resection, so that, after the band had been divided, the gangrenous coil was drawn into the wound, incised, and Paul's tubes were tied in. The upper three-fourths of the wound were then closed and the patient returned to bed. However, he did not rally, and died in about three hours.

The nature of the band which caused the obstruction is doubtful. It was a definite, rounded, cord-like structure, attached at each end to the mesentery, but as it had no attachment to the intestine it can scarcely have been derived from a Meckel's diverticulum, though the gangrenous portion of intestine was probably ileum. It certainly had no connexion with the inguinal canal or the external abdominal ring, and there was nothing to suggest that it was derived from the omentum, which was not adherent to either the gut or the sac wall. No other bands or adhesions were noticed, and, indeed, I think that the reason that the hernia was irreducible was on account of its size and long duration, so that the capacity of the abdominal cavity was insufficient to accommodate its contents; at any rate there was hindrance to reduction at the neck of the sac, and no adhesion between the sac wall and contents.

One cannot help thinking that the band may have been inflammatory in origin, and that it may have followed upon the tapping which had been performed some years before. When I saw the patient there was no suspicion of a hydrocele, and at the operation there was only a small amount of fluid in the sac. Under these circumstances it is quite possible that the trocar and cannula may have inflicted some injury upon the mesentery, and that, as the result of the inflammation thus set up, the band was formed. In support of this view it may be pointed out that the situation of the band was about the level which would be selected for the introduction of the trocar and cannula in tapping a hydrocele. Whatever the cause of the band may have been, it is certainly a very unusual occurrence for a portion of the contents of a hernia to be obstructed in this way.

THE RADICAL CURE OF VARICOCELE.

BY

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SOME six years ago¹ I called attention to a simple and exact method of excising the eight or ten varicose spermatic veins (the pampiniform plexus) which are suspended, in loose areolar tissue, mostly in front of the vas deferens. It is essential to punctuate the fact that surgical intervention must be exclusively confined to removal of this bundle of veins, otherwise disastrous consequences are certain to ensue—for example, gangrene or atrophy of testis. I have seen many examples of the latter, and recently a very painful instance of the former—a gentleman who, just before embarking for Buenos Aires, was operated on by a well known English surgeon; on his arrival here he was suffering from marked toxæmia and a foul septic scrotum. I had to remove a gangrenous