

a "carrier" for six years. The other cases have probably been "carriers" for periods up to nineteen years.

The importance of periodic and persistent bacteriological examinations of the excreta of suspected cases is shown by the fact that the "carriers" were mainly of the intermittent type, and typhoid bacilli were only isolated after repeated examinations. The recent equipment of laboratories in the London County Mental Hospitals will help in this respect, not only in giving facilities for more work to be carried out, but also enabling examinations to be made on absolutely fresh material.

The treatment of these cases presents a very difficult problem, the only prophylactic measures possible being general inoculation and segregation of "carrier" cases. The latter measure confers some hardships on the patient if varying mental types have to be warded together; it also presents administrative difficulties.

In conclusion we would express our thanks to Dr. F. Golla, Director of the Pathological Laboratory at the Maudsley Hospital, and Lt.-Col. S. Elgee, Medical Superintendent of Cane Hill Mental Hospital, for their interest and facilities given to carry out this work.

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(¹) During the years 1907 to 1913 at Claybury Mental Hospital, 539 male and 587 female autopsies were made under the direction of Sir Frederick W. Mott. The incidence of gall-stones was 52, or 9·6 *per cent.*, males, and 95, or 16·2 *per cent.*, females.—(?) Similar investigations at Horton Mental Hospital show there to be several carriers, in addition to one already known and isolated. Cases of typhoid have been comparatively few, but have recently tended to increase. No epidemics have occurred.—Eps.

The Unconscious: A Suggestion.⁽¹⁾ By WILLIAM CALWELL, M.D., Physician, Royal Victoria Hospital, Belfast,

THE word "unconscious" is used in Freud's sense; the word "suggestion" is used more in the general sense of the presentation of an idea to the mind than perhaps in the more technical sense of McDougall.

(¹) A paper presented at the Annual Meeting held at Belfast, July 2, 1924.

The "conscious" is what one is cognizant of at the moment; the "pre-conscious" is what one is not actually cognizant of at the moment, but what one can recall to consciousness at will. The "unconscious" he cannot recall at will or summon to his consciousness; but it can be recalled by special methods, as by psychoanalysis and by hypnotism. It is a dynamic force; it is actively working and has to be reckoned with; it is mostly of the childhood type of mind and has been repressed by "education." The child type of mind is simple, yearns for immediate gratification, is selfish and without an æsthetic standard. On the other hand the average, adult, educated type of mind is complex, controls immediate gratification, is less selfish, has wider interests and has an æsthetic standard. Freud says that the former type persists in the unconscious, even to adult life, but is modified by education, much of which consists of a series of "don'ts," on the primitive mind.

Let us see whether we can work out a "cerebral physiology" aspect of the above crude psychology.

The brain of the common ancestor of man and higher ape contained convolutions suitable for its work in the world. He was not self-conscious, or but feebly so; he could not speak, using the word in the ordinary sense, nor reflect by speech; he could not say, "I think, therefore I exist"; but he could judge of distances to a nicety, he could fight an enemy, make love, search for food. He was a cunning animal, and reasoned in some way, probably by sensations, and had a tenacious memory; but his mind was simple, yearned for immediate gratification, had no æsthetic standard.

In the descent of man new convolutions were added, one might say cell by cell, till the human being could speak, could say, "I think, therefore I exist," and so was self-conscious; his mind became complex with memory and reflection and judgments, ideas and imaginations, and he could inhibit his primitive neural arcs by his neo-neural arcs, as the neural arcs of his primitive convolutions had inhibited the neural arcs of his spinal cord. Everything points to the truth of the supposition that these later mental powers have their basis in the newer or more lately developed association centres; it is an inference in inductive logic; without these centres you have not the higher mental powers; with them you have these higher mental powers; they are indissolubly associated. The older convolutions retain their structure—that is, their anatomy, more or less modified; they retain their physiological functions, modified more or less; witness the fact that the experimental physiologist draws conclusions from the brain of apes as to the functioning of the brain of man, and these conclusions are confirmed by the results of disease. With their shape and their physiological functioning it is

a fair inference to suppose that their systems of internuncial fibres are much the same, modified more or less ; and from these similarities to deduce the inference that those functions which are not available for physiological experiment, the psychology, the animal bias, the animal trend, or nature, the absence of self-consciousness, the simplicity, the selfishness, the want of moral and æsthetic standard, are all, more or less modified, present in, or associated with, these primitive convolutions. Thus it will seem that in man we have the primitive brain and the primitive mind, both modified more or less ; and also the later brain with its new association centres and its new internuncial fibres, of infinite intricacy and complexity, its cells and internuncial fibres interlacing among themselves and with those of the primitive brain.

A young child's mind is remarkably animal—its simpleness, its utter selfishness, its unrestrained manifestation of its feelings, its likes and dislikes, its senseless cruelty, its desire for immediate gratification. Year after year as the child grows these animal traits are steadily inhibited, and curious and bizarre anticipations on the one hand and delays on the other of the adult mind are of common experience. Education fosters the training of the primitive brain or mind into good habits, and also the development of the complicated functions of the associated centres with their powerful inhibitive control of the early convolutions. But these early convolutions must have a power of influencing the later developments to which they are so closely joined, of stimulating the neural arcs which have been added to them as a house is built brick by brick.

As the primitive brain is not capable of self-consciousness I would make the suggestion that, as far as one can differentiate, it is the physical basis of the "unconscious." To repeat, we have thus an animal mind, not self-conscious, with the physical basis in the primitive brain, giving rise to the phenomenon of the "unconscious"; but inextricably connected, mixed and associated with, both controlled by and at the same time stimulating, the adult human mind with its physical basis in the later developed association centres.

This comparatively simple physical view gives a clearer and more intelligent explanation of the innumerable references in poetry, general literature and in psychology to our double nature, to our instincts and our mental conflicts ; one quotation will suffice—Ovid's "Video meliora proboque, Deteriora sequor." We are constantly modifying our animal nature and limiting our instincts, but one day a storm of passion sweeps down upon us, and we behave like a wild animal. No medical man in practice a few years but has been consulted in the case of some young lad or girl who has been

swept off his or her feet by uncontrolled animal passion. Before and after, reason holds sway, and they bitterly and clearly recognize the nature of their transgression: the later developed association centres and mind go down before the storm; the older are but discharging their normal function.

In psycho-analysis, again, the brain is kept quiet as far as any brain can lie quiet; this gives an opportunity for any dominant feeling or thought in the primitive brain to come to the top, and stimulate the higher centres; what was before an ill-defined, vague feeling now becomes a conscious thought. Probably in the term "unconscious" are included and confused two different and separate processes—one the general functioning of the primitive brain, the other those repressed thoughts and emotions associated with the later brain, which are inconsistent with the general trend of our education and morals. Many of the latter may be the result of stimuli from the primitive brain; and it should also be remembered that many stimuli from the primitive brain may be quite consistent with our education and morals—witness hunting.

Our primitive brain is analogous to the simian hand; but we have added many more convolutions to the simian brain to form our brain than we have added muscles to the simian hand to form our hand, and perhaps we have lost some, as we have lost the grasping muscles and shape of the foot.

Diet according to Symbiosis. By H. REINHEIMER.

ACCORDING to the late Sir William Bayliss, a leading physiologist, the vitamins, which the plant alone knows how to manufacture, are a kind of chemical messengers (hormones). "They are obtained from the plant, and are particularly abundant in fresh green vegetables and fruit." . . . "Their precise mode of action is still unknown, but in their absence normal growth and function is impossible and certain diseases make their appearance." Hence the normal growth of the animals depends upon stimulations and influences directly derived from the plant kingdom. The evolution of the animal is in large part directed by the plant, which is also saying that it is cosmically directed, in virtue of those terrestrial and solar influences which the plant purveys. But it is also saying, in a most important sense, that all organic evolution is directed by the amount of mutuality existing between the kingdoms and what this involves in bio-sociality. If the vitamins are, in Sir William's words, "obviously a kind of chemical messengers," then we must consider them as the hormones of symbiosis, as