One of the most interesting and striking features of his reports was that in many instances (77 per cent.) the patients were very poor, lived in their homes during treatment, and their disease was of an advanced type. Furthermore, they continued their occupation while under treatment. Probably his percentage of cures would have been higher if hospital or sanatorium advantages had been available during the Finsen bath treatment and particularly if this had been limited to the mild and earlier type of laryngeal tuberculosis. I have had no personal experience of this treatment, but with some of my colleagues had the advantage, last spring, of seeing the method applied in a hospital in Antwerp. The results appeared excellent and full of promise.

When laryngeal tuberculosis enters upon its more extensive and advanced stages the prospect of cure is scarcely worth serious consideration, if for no other reason than that the lung trouble is beyond repair. All we can do is to relieve pain on swallowing, cough, and other attendant sufferings. It is difficult to conceive of a more cruel ending of human life than that of a patient in the late stages of pulmonary tuberculosis with an extensive laryngeal complication. Speech is painful and swallowing is often an agonising effort. In the intervals between these acts cough permits no respite from the lancinating pain in the larynx which often radiates to the ears. Much as the patient would like some nourishment, this is limited to bare necessity because of the pain produced by the act of swallowing. Hence, and as a result of all the forces against him, it may truly be said that death becomes a long-felt want.

How can we help these sufferers on the down slope? There are two drugs which assist pre-eminently in many cases of dysphagia—viz., "orthoform," which produces local anæsthesia when applied to an ulcerated surface, and "anæsthesin," which acts on the unbroken mucous membrane. A combination of these should be blown from an insufflator on to the diseased areas of the larynx about 15 minutes before any attempts to take food. Some patients can be taught auto-insufflation of the powders. In milder cases pastilles containing the drugs are more convenient than the powder. Should these remedies fail to reach the ulcerated areas or lose their effect, sensation of the larynx may be destroyed by injecting the superior laryngeal nerve trunk from without just before it enters the thyrohyoid membrane. The solution used is 2 gr. of beta-eucaine in 1 oz. of 80 per cent. alcohol.

Finally (and it is, in my opinion, the only circumstance in which radical surgery should be employed in a tuberculous larynx), certain painful areas can be removed with punch forceps and often with very great relief to suffering. Twenty-five years ago I removed a patient's tuberculous epiglottis which was causing great dysphagia. He is still alive and well and every Christmas Day sends me a card of greeting. I ought to add that after

the operation he led an open-air life based on sanatorium régime. Similar results have resulted from galvano-puncture, submucous injections of guaiacol into the swollen arytenoids, &c. For 20 years I have not applied any chemical caustics to tuberculous lesions of the larynx.

In so far as the laryngeal disease may be the cause of cough—and it is a symptom which should be relieved when it becomes excessive or painful—I have found dry inhalations very useful—e.g., of tr. benzoin co., or a combination of creosote, carbolic acid, iodine, spirits of ether and chloroform—especially in the presence of profuse secretion of mucus, and the same benefit may result from intratracheal injections of a 5 per cent. solution of menthol in benzoinol. When these fail, and sooner or later they frequently do, morphia, heroin, and the other derivatives of opium come into their kingdom, and while they should be used with discrimination and judgment, these virtues should not so predominate as to strain the quality of mercy.

ADAPTATION

SUCCESSFUL AND UNSUCCESSFUL.*

BY

H. CRICHTON-MILLER, M.A., M.D. EDIN.

MAN comes into the world with certain congenital qualities, physical and mental. From the cradle to the grave he is exposed to an environment which makes certain demands upon him. The extent to which he adjusts his passions and desires to these demands, and the degrees in which he maintains internal harmony and social efficiency are the measure of his psychological adaptation. The neurotic, the delinquent and the insane constitute the three great groups of unsuccessful adaptations. It is with the first of these groups that we are primarily concerned in this course.

EVOLUTIONARY CHARACTER OF ADAPTATION.

The process of adaptation is essentially a dynamic one and evolutionary in character. We regard man as slowly and painfully fighting his way from his simian origin as "an instinct-driven mechanism" towards a divine destiny. Every step that he takes in this direction is characterised by some extension of conscious purpose in his life, and a compensatory restriction of direct instinctive reaction. But it must not be thought that purpose is in itself a dynamic; the dynamic is always the same—instinct. The introduction of purpose into human life allows of a great range of modification of conduct. This modification implies the process of sublimation, in other words, the application of instinctive energy to some cognate end which has value for society. Human purpose may be ego-centric or altruistic.

* Being the substance of a Lecture delivered on Nov. 16th, 25, at the Tavistock Clinic.

Between these two, ethical values lie. Freud refers to them as the Pleasure Principle and the Reality Principle respectively. To Freud we owe all modern psychology. He transformed psychology from a sterile academic study into a living force. But the old psychological attitude is exemplified even now by Janet, who has just published two stout volumes on "Psychological Healing." It is a purely academic historical survey and belongs to the pre-Freudian era. The central feature of the unconscious motive is to all intents and purposes omitted.

But if we owe our modern outlook to Freud we do not necessarily accept his philosophic conclusions, nor a good deal of the Freudian dogma. We cannot accept it if our conception of human life is evolutionary. In "Beyond the Pleasure Principle" he has said that the theory of evolution is a misapprehension, that the end of existence is not life but death. Most of us find it impossible to discard the central principle of evolution because Freud has found it incompatible with his recent theories.

PROGRESSION OR RETREAT.

Adaptation involves what is common knowledge, that in life you must either progress or retreat. A patient suffering from dementia praecox is one who has chosen to retreat from life and refuses to progress. Life may be a question of growth or stagnation. The phobic who has reached the point of only being able to go to his office by a certain 'bus route, or who can only travel in a corridor train,—such types are people who refuse to accept growth. The psychoneurotic is one who tries to bring life to a standstill; the psychotic is one who retreats from life. Again, life may be a question of fulfilment or escape. Peter Pan escaped and Wendy accepted her human destiny. Life may offer a choice between reality and pleasure. The alcoholic chooses pleasure instead of reality. Reality is too painful for him so he retreats into a chemically produced euphoria. When one thinks of the enormous amount of money and energy that is spent on the treatment of alcoholics, isolating them and giving them medicinal treatment, one realises what a pity it is that a social danger like alcoholism is not treated from the point of view of its fundamental character, that is to say, to discover why the individual is succumbing to the pleasure principle. Alcoholism is the expression of unsuccessful adaptation.

HEROISM AND COWARDICE.

To take another aspect of life, adaptation may involve conflict between heroism and cowardice. Those of us who had war experience realised this again and again. We had to treat "shell-shock" cases as well as malingerers. The malingerer was a coward. Why? Because the mental mechanism that produced his maladjustment was conscious. The neurotic could not be called a coward because he was making a bad adaptation based on an unconscious motive, a process resulting in his

behaviour as a coward. He was a coward in the psychological, not the ethical sense.

In peace time we have to recognise this difference constantly. A failure of adaptation which results in an individual playing the coward may be motivated upon a conscious or an unconscious level. The conscious motive may be condemned in ethical terms, but it is useless so to treat the unconscious. We have to discover the unconscious mechanism that results in the maladjustment, not condemn the result before we know the cause.

All these failures of adaptation we group under the term regression. Regression is the substitution of an earlier mode of reaction for the one that is suitable. Janet refers to this process as "inferior operations," in contradistinction to "superior operations." Freud talks about "adult and infantile reactions," and Jung about the direction of "the stream of psychic energy." There are two types of regression, phylogenetic and ontogenetic. For instance, the advanced G.P.I. case devours his food exactly like an animal. The murderer reacts in a way that belongs to the infancy of the race. On the other hand, if an adolescent suffers from nocturnal enuresis, that is an ontogenetic regression, as he is reacting in a manner more suited to infancy and characteristic of his own past history.

INTERNAL HARMONY AND SOCIAL EFFICIENCY.

We find these various forms of regression and we ask ourselves, "What is the individual retreating from?" We shall see that the aim of life is a two-fold one. First of all the individual should attain internal harmony. This involves the satisfaction of biological demands like security from pain and death; the means of providing for hunger and thirst, the satisfaction of the desire for procreation, which implies self-realisation; achievement for the man and attainment for the woman. Internal harmony can only be achieved either by the direct satisfaction of these desires or through sublimation. Sublimation is the indirect application of instinctive energy to a cognate end that has value for society. We are apt to forget that sublimation can never be a complete substitute. We are apt to hope that by constant serving of an ideal, by continually following a programme of sublimation, we can attain complete fulfilment. This is not so, for the excellent reason that the survival of the race would be jeopardised if it were possible for the individual to appease his desires by sublimation. Hence sublimation must always leave a balance of dissatisfaction, and it is here that the vast number of failures in adaptation occur. Again and again with neurotics we find that they are sublimating imperfectly. They cannot accept the margin of dissatisfaction which represents unexpressed desires.

Internal harmony then is the first aim of man; the second is social efficiency. This is a herd aim. An adequate contribution to society is part of the scheme of life. Whether we like it or not, we are gregarious animals and our evolution is along this line. We are not descended from the great cats

but from monkeys, and when we try to eliminate the herd factor from our mode of life the result is always unsatisfactory. For complete adaptation an adequate contribution to society is essential, and in making this contribution the individual must maintain an attitude of good will. Good will without capitulation is extraordinarily difficult to attain. It sounds so simple, but in considering the neuropaths that one knows it is obvious that again and again we have either chronic ill will to society or capitulation. The former wage needless and useless warfare against society; they have never been able to make "peace with honour." It is this that we have to work for with a large number of the psychologically maladapted. They cannot find the balance between inordinate self-assertion and utter capitulation. Either they will not merge themselves in society or they are submerged. In the latter case they reach the point at which they dare not wear unfashionable clothes, or are afraid not to go to church. They are hopelessly fettered by public opinion and are terrified by the fear of ostracism.

HEREDITY AND ENVIRONMENT.

We have to consider the influence of heredity and environment upon the achievement, or the reverse, of man's two-fold aim. A hereditary deficiency of grey matter makes a good adjustment impossible. A thyroid so inadequate that even constant administration of the gland will never make the function efficient, must inevitably prevent satisfactory adaptation. People come into the world with all kinds of hereditary characteristics that compromise their chance of adequate adaptation. The more we study this great factor, the more we realise that it belongs to that mysterious endocrine system of which we hear so much and know so little. Its importance we cannot over-rate. It is the spear-point of our progress and it is also the heel of Achilles of the human being, his vulnerable point. When we have chronic bacterial infection, let us say, it is rarely our grey matter that suffers; that is relatively immune, but it is our endocrine system, the adrenals, the thyroid, sometimes the pituitary, that feel the hurt. This it is which carries forward from one generation to another the mysterious inheritance of personality. It is very irritating to realise that we know so little about so important a matter, and to realise how baffling to investigation it is, but yet the more we face the problem, the more are we bound to accept it. It would be so pleasant if we could localise, weigh, and measure, but we cannot. In this line of approach we are bound to speculate. Jung has most brilliantly described the various types of mentality that we know. We have to realise that two individuals, brought up in identical conditions, may react differently in an infinite variety of ways. One will start life as an introvert, the other as an extrovert; one as a feeling type, the other as intuitive; one may be sensorial, the other a thinking type. The same environment cannot possibly present the same challenge to each. These

inherited characteristics are bound to condition the ease or difficulty with which the ultimate reaction is attained.

When we consider environment it is easy to realise the multiple factors that compose it for any one individual. On the physical side, one has started life with a good blood pressure, the other has always had a low blood pressure. No factor can mean more in the way of helping or frustrating a successful adaptation. On the emotional side, one child comes into the world and from the beginning is his mother's darling, another is always her father's pet. Maternal approbation and paternal neglect are factors which make an enormous difference to facility of adjustment.

AN ILLUSTRATIVE CASE.

Just recently I saw a patient, an artist, who had lost the use of her right arm owing to functional spasm. On the physical side she had a parathyroid deficiency and the emotional picture was that she was a second child with a sister before her. The first thing that she could remember was her mother telling her what a disappointment she was, that she ought to have been "Malcolm." She grew up believing that she ought to have been a boy, and that an unjust fate had robbed her of her rightful share of maternal affection, so she made violent and over-determined efforts to obtain all her father's affection and succeeded fairly well, at the cost no doubt of unpopularity with her brothers and sisters. She carried on unceasing warfare with her mother, and when she was 38 the mother collapsed into senile dementia, through which this daughter had to nurse her for two long years. She became the complete martyr; she, who had always attributed any misfortune to her mother's unkindness, was condemned to be her constant attendant. Her art was now being sacrificed to her mother's need. By the time the mother died, the arm was useless for painting. Now, if she were to forget all this, and make a reasonable adaptation to life to-morrow, it would necessarily involve forgetting her martyrdom, so she continues to enjoy her sacrifice, wallowing in her failure of adaptation, because it gives her secret satisfaction. She is revenging herself on her mother; going through the world a pitiable object; crying poverty and demanding support because she is the victim of her mother's injustice.

FURTHER CONSIDERATIONS.

When one considers the infinite possibilities of variety in family environment, it is hardly necessary to look further to realise the multiplicity of demands that are made. But school life presents yet further challenges with all its possibilities of physical fear; of feelings of psychological inadequacy and of social inferiority. In adult life again we have economic strain and the challenge to accept economic mediocrity. All these are demands which society makes upon us; to adapt ourselves to the commonplace; to sacrifice our status and our aspirations, and in all these innumerable adaptations we are

handicapped or assisted by our hereditary equipment. What sort of transmutation does it suffer? Does it make us more, or less, capable of adaptation? If we consider these questions in relation to racial types, again we find an immense variety. We find the imaginative range of the Celt which makes him the least hopeful victim of the obsessional neuroses. There is the intellectual brilliance of the Jew; his facility in adaptation, notably economic; yet with all this, Jewry has produced an immense proportion of hysterics. We have the stolidity of the Teuton, his incapacity to see beyond the objective; and on the other hand, the instability of the Latin, with his remarkable power of blending an objective outlook with creative vision.

We could continue endlessly, and the more we study this problem of adaptation the more we realise its significance, not only for the individual, but for every group, for every community, for every race.

VERTIGO.*

BY

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VERTIGO may be quite briefly defined as a subjective sensation of instability. It is a departure from the normal sense of equilibrium, which in health is hardly perceptible, though it plays a part in the general sense of well-being. The normal sense of equilibrium is dependent upon the proper coördination of afferent impulses from nerve-endings in the retina, the labyrinth, and muscles and joints. From these three sources impulses are constantly passing upwards. They are brought into relation with one another in the brain-stem whence they exert an unconscious control over bodily position and postural tone.

Vertigo has been defined more explicitly by Hughlings Jackson as a state of consciousness of the effect upon motor functions of the want of harmony between these afferent impulses.

PATHOLOGY.

Vertigo may be caused by disease or physiological disturbance in either the sense organs and afferent nerve-fibres coming from them, or the coördinating centres themselves.

Anyone may test for himself the effect of ocular disturbance in producing vertigo as follows. Fix the eyes upon an object in the near distance and start walking towards it. While doing this, displace one eyeball inwards by pressure with the finger upon the outer canthus, and continue walking; the result is diplopia and a sense of giddiness, sometimes associated with nausea. Vertigo may also be produced experimentally by artificial stimula-

tion of the labyrinths by means of rotation or syringing the ears with hot and cold water.

In various diseases we find examples of vertigo due to diplopia, and to irritation or destruction of the labyrinth from infective, toxic, or degenerative causes. Tabes supplies an example of vertigo due to the loss of muscle and joint sense. It is interesting to compare the effects upon equilibrium of complete deprivation of any one of these special senses.

Diagram to Illustrate the Nervous Mechanism of Equilibrium.

R. = Retina. L. = Labyrinths. M.J.S. = Muscle and joint sense.
C.C. = Coördinating centres in brain-stem and cerebellum.
E.M.N. = Efferent motor neurons.

With the eyes shut a man hardly feels unsteady. Complete destruction of both labyrinths leads at first to intense giddiness, but in time this disappears. Not long ago I had the opportunity of examining a man who had suffered from an acute infection of both labyrinths, for which, in order to save his life, a complete double labyrinthectomy had been performed. To my surprise he was able to walk firmly and steadily with no complaint of giddiness, and could continue to do this even when his eyes were blindfolded. These observations lead to the conclusion that muscle and joint sense is the most important leg of the tripod which supports equilibrium. This explains why the tabetic, who has lost sense of position and of passive movement in the lower limbs, is unsteady with his eyes open; when they are shut he falls. It is also clear from such observations that the coördinating centres have considerable powers of adaptation. The vertigo produced by diplopia, by labyrinthine destruction, and even by disease of the posterior columns in the cord varies with the suddenness with which the lesion occurs. For disturbance of ocular balance and loss of labyrinthine function the nerve-centres can apparently compensate completely if given time.

Failure of the coördinating centres themselves may be caused by anoxæmia or by destructive lesions. Common examples of the former are the vertigo experienced upon getting out of bed following an illness, that which occurs in aviators at high altitudes, or that felt as the result of confinement in a hot and stuffy room. Or a defective oxygen supply may depend upon such causes as anæmia, or the low blood pressure of Addison's disease—in which case it is of a more permanent

* A Lecture delivered before the Fellowship of Medicine on June 26th, 1925.