The Nature of Insanity. By CHARLES MERCIER, M.B. (Lond.), F.R.C.S., late Senior Assistant Medical Officer at Leavesden Asylum.

II.

Before the circulation of the blood was discovered, the pathology of diseases of the heart must have been unknown, and their treatment empirical and of little effect. Before the discovery of the glycogenic function of the liver, the pathology of diabetes remained a mystery, and its treatment a matter of guess-work. In all dealings with the facts of life, the science of the normal must precede the science of the abnormal. In the domain of mental operations the science of the normal is of very modern discovery, and Alienism, the science of the abnormal, has consequently been until recently compelled to limit itself to collections of materials for future use, and to tentative groupings of these materials which have necessarily been provisional on their harmonizing with the future developments of the science.

Mr. Herbert Spencer having done so much, as I think, to supply a firm basis of knowledge in the region of the normal, the time seems to have arrived for erecting on this basis a system of procedure with respect to the morbid, and for using the principles of healthy mental action with which he has provided us, as standards by which to test qualitatively, and to measure quantitatively, the aberration which occurs in the insane.

The preceding paper was mainly occupied in insisting on the inadequacy of the prevailing concept of insanity, and although the present series of articles is intended to furnish the alienist with a system for daily use and reference in the wards and in the consulting room, yet it is necessary first to diverge into a somewhat parenthetical examination into the nature of insanity, for it is manifest that no discussion can be useful in the absence of an adequate concept of the matter discussed. Let those who doubt the truth of this statement turn to the interminable discussions of the school-men on the Essences, discussions prolonged over generations, discussions in which were engaged men whose reputations as thinkers have lasted for centuries, but all whose industry and all whose ability have resulted in their labours being regarded with wonder indeed, but with a pitying and contemptuous

wonder at the barren outcome of such immense exertion. Of their voluminous writings one can but say with Hamlet, "words, words, words," and with Macbeth, "signifying nothing."

In attempting to obtain a clear concept of the Nature of Insanity, and to express this concept in the form of a definition, I am quite conscious of the temerity of the effort. Again and again the attempt has been made by successive writers on insanity, and again and again the result has been condemned, until all hope of discovering a satisfactory definition seems to be failing, and it has come to be called "an *ignis fatuus* which eludes and bewilders pursuit." Nay, such attempts at definition are said to show only the narrowness of the definer, and it seems doubtful whether they are not even held deserving of moral reprobation. Upon examining the matter, however, there does not appear to be any valid reason for relegating the definition of insanity into the limbo of impossibilities. Insanity is surely a sufficiently definite entity. So easy is its practical recognition that every medical practitioner, whether he has had any psychological training or no, is considered by our legislators competent to pronounce whether it exists or not in any given case. That is to say, he is legally competent to say on which side of the line which divides sanity from insanity his patient is situated. And yet we are to admit that no such line can ever be drawn! True, the line may be a broad one, its edges may be blurred, but to deny its existence, to deny that insanity can be defined from sanity, is equivalent to saying that they do not exist apart. It may well be that insanity is not abruptly demarcated from sanity, for it is a natural group of things, and where in nature do we find an abrupt demarcation? But if on that account we renounce the attempt to define it, all definitions whatever must be abandoned. What, after all, is a definition? It is an expression of the subjective concept which corresponds to the objective existence of a group of things. And to admit our inability to define a group of things is to admit that our concept of the qualities belonging to that group is not in correspondence with them, that we are not sufficiently acquainted with them. To say that we can never frame a certain definition is, therefore, to say that our knowledge has reached a definite limit beyond which it cannot advance, which is absurd. Whether it be possible or impossible to frame a definition of insanity, at any rate the attempt must

be made, not only on the ground above stated, but because I have found upon trial that it is impracticable to render intelligible the scheme of investigation promised in the last paper, without a previous explanation of the principle on which it is founded.

While dwelling on the necessity of recognising the distinctness of nature between the several orders of facts which insanity presents, the previous article also insisted that these several orders of facts are interdependent on one another, and maintain throughout a correspondence; and, moreover, that the nervous process is the central fact which elicits the other two. When a nervous centre energises feebly, an idea of a movement, say of stretching forth the arm, arises in the mind. When the same nervous centre energises more strongly, the same idea arises more vividly in the consciousness, and the movement actually takes place; the arm is stretched forth. From this fundamental correspondence it results that the laws governing the actions of these processes must have a like fundamental similarity. If, therefore, normal conduct and normal mental action depend on normal nervous processes, the alteration of conduct and of mental action in the insane must depend on morbid alteration of nervous processes; and the possible departure from the normal that can occur in the nervous process must be the measure of the total possible aberration in insanity. Hence, proceeding on the deductive method, a knowledge of the manner and degree to which the action of the nervous system can be disordered must be the first requisite to a comprehension of the whole process of insanity.

Regarded physically, and reduced to its most general terms, the nervous system is an apparatus for the storage and expenditure of force; and the condition of greatest efficiency is that of maximum storage, and of an expenditure bearing a certain proportion to the amount in store. The possible disorders of such an apparatus are deficient storage on the one hand, and deficient or excessive expenditure on the other.

Deficient storage of force in the nervous system is the physical basis of all forms of alienation characterised by underaction, as idiocy, imbecility, and dementia. For, since every nervous discharge issues ultimately in bodily movement, diminished bodily movement must result from diminished nervous discharge; and since the capacity of the nervous system, or the amount of so-called potential energy

that it can contain is limited, persistent defect of bodily movement cannot result from persistent limitation of discharge, but must be due to deficient storage. It is true that a considerable proportion of the liberated force may be absorbed in opening up new channels of communication among the centres, this being the physical accompaniment of mental activity, and thus the actual bodily movement may be disproportionate in amount to the discharge in the brain, but the ultimate result is in movement of such increased complexity as to compensate for the diminution in quantity, and besides, such diminution would not be persistent.

Defective expenditure of force by the nervous system cannot persist unless storage is defective also. The capacity of the nerve-cells being limited, if storage continues while expenditure is checked, then when the accumulation has reached a certain point, a discharge *must* ensue. The tension which exists when the discharge of the lower centres finds no ready outlet, has for its mental accompaniment the appetites; and the same condition in the higher centres is accompanied by the mental condition known as *ennui*. It is probable that the insanity which occurs in the subjects of solitary confinement, has for its physical accompaniment a continual accumulation of energy, which, finding no normal outlet, at length reaches such a pitch that it bursts out in tumultuous and violent action.

The last mode in which it is possible for the nervous process to become disordered in a physical sense is by excessive expenditure, resulting in increased bodily movement, as in all forms of insanity characterised by overaction. Since, as before insisted on, the capacity of the nerve-cells is limited, an excessive expenditure, by which is meant an expenditure persistently in excess of restorage, must necessarily result in exhaustion, that is in removing the greater part, and if continued long enough, the whole of the available force from the nerve centres. Their store of force being diminished or exhausted, the function of the nerve centres, which is the expenditure of this force, is necessarily weakened or stopped, and as the storage of force is a work of time, this function cannot be restored to efficiency until after an interval. Hence all states of overaction are of necessity intermittent. When the overaction has been extreme, recuperation may be impossible; the store of force may be exhausted so far that not enough remains to provide the motion necessary for carrying on the vital functions; the

circulation or the respiration will then fail, and death result.

Hence it appears that as a consequence of the physical constitution of the nervous system, every form of insanity must be a condition of underaction, a condition of overaction, or an alternation of the two. Furthermore it is apparent that while we have here a wide boundary within which insanity must lie, yet that the two are by no means co-extensive. In fever there is a general underaction of the organism. The individual tissue elements may be over-acting, but the combined movements of the organism are greatly diminished. Yet the fever patient is not necessarily insane. It is true that at the time of greatest prostration, that is of greatest underaction, he may become alienated (delirious), but the underaction may be very great without perceptible alienation, and the latter is rarely an important or preponderant feature of the disease. Again, a man flying from an enemy may undertake such excessive exertion, *i.e.*, such overaction, as may prove rapidly fatal. Yet he is not on that account insane. Clearly, therefore, it is necessary to find some narrower boundary, within the limits of under and overaction, which shall be co-extensive with the field of insanity.

The starting-point from whence the above very general view of insanity was obtained, was an enunciation of the functions of the nervous system of the widest possible generality. A more special enunciation may lead to a more specific conclusion. The physical view takes account of the amount of force stored and expended by the grey matter of the nerve centres, but it takes no cognizance of the directions in which the expended force is distributed. This is a matter for the physiologist, and physiologically the function of the nervous system is to distribute its force in such a way as to co-ordinate the movements of the several parts of the organism. By co-ordination is meant combination in determinate ratio. The possible deviation from the physiological normal is, therefore, the inco-ordination of movements, or their combination in indeterminate ratio. The term co-ordination has been so much and so exclusively used in medicine with reference to a disease which presents a singular and striking instance of one form of it, that its use here will tend to mislead unless the more general meaning is illustrated.

Within the range of normal action the several movements

of the organism are combined in determinate ratio. When I make an up-stroke with my pen, my interossei muscles must contract, and the flexors of my fingers must elongate to an equivalent extent. Similarly the movements of the thumb must bear a determinate ratio to those of the fingers. More than this, the dimensions of the following down-stroke must bear a definite proportion to those of the up-stroke which preceded it. Further consideration will show that the movements which form each letter and each word must bear a definite ratio to those which precede and follow them. Again, if I reach over the table to get a book, the movements of my arm must bear a determinate ratio to those of my trunk—the more of the one the less of the other; and similarly if I rise to my feet to reach it. Further, if I undertake a prolonged exertion, the movements which subserve the prehension and assimilation of food must bear a determinate ratio to those which dissipate force, otherwise the exertion fails from defect of food, or is clogged and encumbered by excess. Without adducing further examples, it will be evident from those given above that co-ordination and inco-ordination are extremely comprehensive terms, that there is a co-ordination of the movements both simultaneous and successive of the various parts of the organism and of the organism as a whole, and that any one of these forms of co-ordination may fail.

It will be apparent that by regarding insanity from the physiological standpoint as an inco-ordination, a distinct advance has been made in the precision of the concept. For inco-ordination of movement has been defined as an alteration of the ratio of one movement to another, and an alteration of the ratio between two movements means that one movement is relatively increased, or that the other is relatively diminished, that is that one part must overact or another must underact. Hence the provisional definition of insanity at which we have now arrived will be the under-action or overaction of the organism as a whole, together with the underaction or overaction of its parts relatively to one another. The idiot who sits still all day emitting "beastly bellowings" exhibits, with a general underaction, an overaction of one set of movements. So with the dement who perpetually goes through the movements of washing clothes. The patient with acute delirious mania exhibits general overaction, but there is entire absence of the movements by which he should earn his living, and a serious

underaction of the movements subserving the prehension and assimilation of food. If we believe in the parallelism between the psychical condition and the nervous processes—and on the existence of such a parallelism is based the whole fabric of alienism and the better part of psychology—then we must believe that the undue preponderance of any psychical condition, be it a preponderance of malice, of suspicion, of melancholy, of amorous or any other feeling, has its material counterpart in the overaction, absolute or relative, of some portion of the nervous system; what portion, or how much, it is no part of the present argument to inquire, but some overaction there must be, or the parallelism would not be maintained. While, however, the train of reasoning here gone through compels us to admit that every form of insanity must of necessity be an inco-ordination, that being the sole possible physiological abnormity of the nervous processes, yet the disease which is the commonest example of inco-ordination—locomotor ataxy—shows how the simultaneous movements of different parts of the organism may be combined in indeterminate ratio without any approach to the condition of insanity. While, therefore, a step has been gained in the precision of our concept of insanity, a further limitation of it is necessary.

The case has been instanced above of a man sitting still all day and shouting. Such an act we call insane, but if the man is a shipwrecked mariner who has sighted a ship from the open boat in which he has escaped, the act is not an insane one. Here the difference is not in the act but in the circumstances surrounding the actor. A man who is unable to enumerate more than five objects, who walks about naked *coram populo,* adorning his person only with tawdry ornaments, is called insane; but if he has a black skin and lives on the banks of the Congo, he is considered an average specimen of normal humanity. If a man jumps out of a second floor window into the street beneath, we consider such an act proof of insanity. But if the house is in flames behind him, and the firemen below are holding a blanket to catch him, the act is a rational one. If John Stubbs, bricklayer's labourer, orders a carriage and pair to be sent to his stables and a banquet to be spread at his private residence, he is considered insane, but the same orders from his Grace the Duke of Omnium would be perfectly normal. In all these cases the same act may be sane or insane according to the surrounding circumstances which environ the actor,

and it is obvious, therefore, that no formula of which a reference to these circumstances does not form an integral part, can adequately express the true nature of insanity.

These considerations lead us to the last and most highly special function of the nervous system, viz., its psychological function, which is to co-ordinate the movements of the organism as a whole, with reference to its surrounding conditions, or in Mr. Spencer's language, to adjust the organism to its environment. Regarded from this, its psychological aspect, it is evident that the total possible deviation from the normal, of which the nervous processes are capable, is the non-adjustment of the organism to the environment. A moment's consideration will show that every case of insanity is an instance of the non-adjustment of the organism to its environment, and an examination of the cases instanced above will show that the insane quality of the act is not intrinsic in the act itself, but in the maladjustment of the act to the circumstances under which it was performed. Even this expression, however, much as it has advanced in precision over those which went before, cannot be accepted as final without a further limiting modification. If a man break his leg, he is by reason of his broken limb thrown out of adjustment to his environment, but a broken limb is not a condition of insanity. Similarly with valvular disease of the heart, the embarrassment of the heart's function diminishes the movement of the whole organism, and renders it less able to contend with surrounding conditions, that is, it throws it out of adjustment to its environment; and so with every form of bodily disease. What then is the difference between the non-adjustment of the organism to its environment which results from bodily disease and that which constitutes insanity? The difference is this, that in bodily disease the failure is primarily in the adjustment of the different parts of the organism to one another, from which it results secondarily that the altered organism is no longer adjusted to its environment; while in the case of insanity the failure is primarily in the actual process of adjustment to the environment, and whatever failure there may be in the adjustment of the several functions to one another within the organism is a secondary affair. In bodily disease the functions are out of relation to one another; in insanity the organism as a whole is out of relation to its environment. In every aberration from the normal in the life of an organism there are three elements

to be considered. There is the organism, there is the environment, and there is the process of adjustment of the one to the other; and either of these three may alone primarily depart from the normal. If a man is imprisoned in a mine by a fall of earth, if he is floating alone in the ocean, he is unadjusted to his environment, but the failure in the adjustment arises from no defect in the organism, neither is the *process* of adjustment of the one to the other primarily disordered, for the efforts at digging in the one case and swimming in the other are attempts to readjust the organism to its altered environment; in other words, they indicate the integrity of the *process* of adjustment; what is at fault in the environment itself.

The organism may itself become abnormal, owing to the failure of the internal functions to correspond with one another, as in the case of valvular disease of the heart; and this disease of the organism necessitates a certain defect in the adjustment of the organism to its environment; but what follows? The subject of the disease alters his method of living; he refrains from active exertion; he alters his diet; he ingests remedies; he removes his bedroom to the ground floor. In other words, he readjusts as far as possible his altered organism to its environment. Here there is no failure in the environment, and there is no failure in the process of adjustment of the organism to its environment. What has failed is the adjustment of the processes within the organism which allow of its adaptation to its environment. So in the man with the broken leg, the parts of his organism have become unadjusted to one another, and this alteration within the organism necessitates its re-adjustment to its environment. The patient gives up locomotion, and goes to bed; in other words, the required readjustment takes place. But now suppose that the patient becomes delirious. He gets out of bed, and tries to walk. The act is manifestly an insane one, not in itself, for to a normal organism it would be perfectly normal, but because it is no longer adapted to the altered relations subsisting between the organism and its environment. In other words, it exhibits a failure in the *process* of adjustment.

The bodily disease which is most closely allied to insanity is epilepsy, and the definition which shall establish a satisfactory distinction between them must be acknowledged to make *ipso facto* a close approximation to adequacy. Epilepsies may for the present purpose be broadly divided into

three kinds—the epileptiform seizure, the *grand mal*, and the *petit mal*. The epileptiform seizure is a bodily disease. There are convulsive movements of a part of the body; there are, that is to say, maladjustments of parts of the organism to one another, and these internal maladjustments necessitate a readjustment of the whole organism to its environment; for instance, the patient leaves off work. But the readjustment does actually take place. There is no primary failure in the readjustment of the organism to its environment; there is no insanity. The *grand mal* is a combination of bodily disease with alienation. There is convulsion; there is profound disturbance of the fundamental vital processes, of circulation, respiration, and the various secretions, all of which maladjustments are purely internal; but there is at the same time a simultaneous disorder of the three elements which were given in the previous paper as forming the basis of insanity. There is excessive discharge, or disordered nervous process; there is excessive movement, or disorder of external manifestation; and there is loss of consciousness, or disorder of subjective accompaniment; yet an epileptic fit is looked on as a bodily disease, and not as an act of insanity. And the reason is clear. Although the organism is thrown completely out of adjustment to its environment, and although the several events in the paroxysm are so nearly simultaneous that no observation can determine which is primary and which secondary in point of time, yet, wide as is the maladjustment of the organism to its environment, the tremendous commotion among the interactions within the organism is by so far the most prominent and striking of the two abnormities, that it is by common consent allowed to have the leading *rôle*, and an epileptic fit is universally and rightly regarded as in the main a bodily disorder. Lastly, in *petit mal* there exist both forms of the maladjustment; there is failure in the process of adjustment of the organism to its environment, and there is some disturbance in the relations which the bodily processes bear to one another. The failure in the first process is seen in the disturbance of consciousness and in the altered conduct. The disturbance of consciousness may be vertigo, or it may be one of those complex reminiscences to which attention has been drawn by Dr. Hughlings-Jackson, or it may be a vague confusion of which no precise description can be given, or it may be total loss of consciousness, but there is always some disorder of mind.

The alteration of conduct is seen in the relinquishment of work and in the "automatic" movements which these patients often perform. In such attacks the patient is considered alienated or not according as the failure in the process of adjustment of the organism to its environment is or is not the primary and preponderating feature in his malady. If, overcome by vertigo, he calls for help, and clutches at surrounding objects to save himself from falling, he exhibits by so doing an attempt to readjust his altered organism to its surroundings, which shows that the process is intact, and that he is not alienated. But if he, being a cobbler, goes through empty-handed all the movements of mending the shoe which has fallen from his lap and lies unnoticed on the floor, then it is equally clear that the failure is in the process of adjustment, and that he must be pronounced to be alienated. It is true that this condition is ordinarily so transient that the patient is not formally called insane, but the identity of the condition with that of insanity would be at once recognised if it were permanent or of longer duration.

The other bodily condition which approaches most nearly to insanity and occasionally merges into it, is the strange assemblage of symptoms which are grouped together under the title of Hysteria. Without here entering upon the subject of the actual nature of hysteria, a subject of great magnitude and difficulty, it may be taken as universally admitted that between insanity and hysteria there is a material difference. Although the hysteric patient exhibits disorder of the mind, yet she cannot be considered as necessarily or invariably insane, and this alone is enough to negative the definition of insanity as a change of mental conditions only. The difference between them is still the same, that while in insanity the disorder is in the process of adjustment of the organism to its environment, in hysteria the non-adjustment exists not primarily, but secondarily, by reason of the previous disorder which has occurred among the processes going on within the organism itself. A consideration of the multitude of abnormities known as hysterical will render apparent the truth of the above statement. A patient lies in bed on account of a "pain in her knee," for which no recognisable cause can be found; and in order to put the case most unfavourably for the present hypothesis, let us postulate that there is no structural alteration in the knee to account for the pain. "Very well, she is shamming, and

that settles it," says the practical man. But that does not settle it. Grant that the patient is shamming, and now whence arises the propensity to sham? Shamming is not normal action. There still remains something to account for, and the difficulty is not removed but postponed. The practical man has paid his debt indeed, but he has paid it with a bill at sight which all his resources are insufficient to meet. So obvious a foolsmate has long discredited the theory of the practical man, and it has moreover become the general opinion among thoughtful observers that in "hysterical pain" there is pain actually felt, and the question to be answered is, What is the nature of the defect when pain is referred to a part which is structurally normal? Pain is a mental state; it is an affection of mind, and like all other mental states it is the accompaniment of a nervous process. "What is objectively a change in a superior nerve centre is subjectively a feeling." To say that the process in the superior nerve centre which normally accompanies structural alteration in the knee, now occurs in the absence of such structural alteration, is to say that the nervous process and the structural condition of the knee are unadjusted; and this non-adjustment is wholly comprised within the limits of the organism.

Now suppose that the hysteria is manifested by a fit of immoderate laughter. Such laughter is not spontaneous, it is excited by some risible incident in the environment, but it is out of proportion in duration and amount to the ludicrousness of the incident which provokes it. In other words the action of the organism is primarily unadjusted to the state of the environment. Is this then an act of insanity? Hardly; for together with the laughter, which is often called *uncontrollable*, there goes the perception of its inappropriateness, and the endeavour to moderate it to an amount proportionate to the incident which excited it. That is to say, although the process of adjustment of the organism to the environment is primarily disordered, yet this disorder affects a portion only, and a subordinate portion of the process; and while this one portion of the process is disordered, another and higher portion is striving to readjust it and restore the correspondence. Evidently, however, we have here reached a point at which the balance between bodily disease and insanity is trembling at the turn, and the further distinction between them will become increasingly difficult. But this difficulty arises from no defect in the distinction here drawn

between them, but because the things themselves merge by insensible gradations into one another. When it is remembered that the highest nervous processes, which subserve the highest and most complex adjustments of the organism to its environment, are developed by successive degrees out of the lowest nervous processes which subserve the simplest adjustments of the parts of the organism to one another, and that between these two extremes there exists a continuous series, or rather an interwoven plexus of many continuous series, it will be evident that the functions must exhibit a gradation similarly continuous, and that at no place can a definite line of demarcation be drawn between them; and he who would endeavour to do so must first settle that precise transverse plane in the body of a snake where the body leaves off and the tail begins. While, however, the provinces of the physician and the alienist are conterminous and to a certain extent overlap, it is none the less accurate to say that the physician is concerned with the failure in the process of adjustment of one function to another within the organism, while the alienist is concerned with the failure in the process of adjustment of the organism as a whole to its environment.

Insanity has, however, other sides than that which unites it to bodily disease, and an adequate definition must limit the concept not on one side only, but on all. When a man coming downstairs fails to observe the last step, and falls in consequence, there is a very distinct failure in the adjustment of the organism to its environment. On the one hand the internal concept of the spatial relations of surrounding objects fails to correspond with the spatial relations existing externally; and on the other hand the action of putting down the foot is adjusted to a position of the floor a step higher than it actually is, that is it is unadjusted to the position of the floor existing in the environment. The lad who, estimating his own power of leaping and the width of the brook in front of him, decides that he is able to cover it, and on trial jumps short and gets a ducking, exhibits a failure in the adjustment of the organism to its environment. The man who estimates that it will take him ten minutes to walk to the station, and so regulates his pace that it takes him twelve minutes, whereby he loses his train, exhibits a similar failure. The business man who, forecasting a rise in prices, buys heavily, and on a fall of prices ensuing sells at a loss, exhibits a similar failure. The statesman who, observing

the temper of Parliament, the tone of public meetings, the position of national affairs, the state of trade and the result of bye-elections, dissolves Parliament in the hope of increasing his majority, and finds himself defeated at the elections, exhibits a similar failure. In all these cases there is a failure in the adjustment of the organism to the environment, yet none of them is a case of insanity. They are Mistakes, and it becomes necessary to re-examine our formula to see if it really includes mistakes in its denotation, and if it do to modify it so that they may be excluded.

To say that the organism is adjusted to the environment is to say that it is in definite relation with the environment, and for a relation between two terms to be definite it is necessary that the terms themselves between which the relation subsists should also be definite. Thus between the terms "ten" and "three and a third," a definite relation can be established; but between the terms "ten" and "three and a fraction," no definite relation can be established, and the failure in definiteness of the relation occurs from no defect in the *process* of establishing the relation, but from the indefiniteness of one of the terms between which the relation subsists. And this is the distinction between an insane act and a mistake. In the former there is the failure to establish a definite relation between two definite terms, in the latter there is a relation established which is indefinite because its terms are one or both wanting in definiteness. For the organism to be adjusted to its environment, not only must the process of adjustment be normal, but both of the terms to be adjusted must be definitely representable in consciousness. Now the definition of insanity is a failure in the *process* of adjustment, and the onus of failure lies in the process itself only when the terms are capable of adjustment. If the condition of the organism on the one hand, or the condition of the environment on the other, is such that they are either of them incapable of being definitely represented in consciousness, then the failure is in the representation of the terms in consciousness, and not in the process of adjustment of the one to the other. In each of the above examples, and in all cases of mistake, it will be found that the failure is in the representation of the terms in consciousness, and not in the process of adjustment of the one to the other. Thus in the case of the lad jumping the brook, neither the amount of exertion necessary to clear the brook nor the capability of the organism to put forth the exertion

were definitely representable in consciousness, and hence the adjustment failed. In the second case, the distance between the man's house and the station is not representable in consciousness with sufficient definiteness, and again the adjustment fails, and so of the other cases. In the case of the man who misses the last stair, he is occupied with some other train of consciousness, he is "not looking," and hence the environmental term, though sufficiently definite to be presented distinctly in consciousness, is actually, from the fault of the organism, not so presented, and hence the failure of adjustment must still be pronounced a mistake. How near this mistake approaches to momentary alienation is seen in the common explanation of it as due to "absence of mind," and it bears much the same relation to insanity that deep sleep does to coma. If a person with open eyes and in broad day advances to the head of a staircase and walks on to the stairs with the movements appropriate to walking on level ground, an act not very uncommon in dementia, the case is otherwise. Here the terms are definitely presented, and the failure, which must be referred to the actual process of adjustment, is rightly attributed to insanity.

From whatever point of view it is regarded, insanity is then found to be a failure in the process of adjustment of the organism to its environment. While this definition is adequate as expressing all the facts of insanity, it at the same time clearly demarcates them from the occurrences of bodily disease on the one hand and from those of erroneous conduct on the other. The definition expresses in short the concept, the whole concept, and nothing but the concept, and fulfils therefore all the requirements of an adequate definition. But the discussion now terminated, somewhat tedious as I fear it has been, has furnished us with far more than the empty gratification of a definition. It has furnished a stable foundation on which to build the system of alienism referred to in the preceding paper, and it has enabled us to trace the outlines of the structure. Given that insanity is a disorder in the process of adjustment of the organism to the environment, it follows that profitably to investigate a case of insanity, it is necessary to examine in detail the factors in that process, and to apportion to each its share in the result. Now the factors in the process of adjustment of the organism to its environment are two:— the totality of the internal processes of adjustment and the totality of external processes of adjustment, which are,

roughly speaking, co-extensive with mind and conduct respectively; and here we arrive by another route at the conclusion previously reached, that the first requisite to the profitable study of insanity is the formation of schemes for the investigation of these two orders of facts.

It may seem that the above review extends over a field unnecessarily wide in proportion to the result attained, but the view of insanity as a condition of overaction or underaction of the whole organism and of its parts, though it has disappeared from the definition here arrived at, was not only a stepping-stone to the result attained, but will reappear and will be found of service in the future consideration of the Forms of Insanity.*

CLINICAL NOTES AND CASES.

Emotional Insanity with Homicidal Violence. By PHILO-INDICUS.

In the beginning of 1880 the following scene took place at a well-known institution in London, where ladies are trained for various useful occupations in the world.

Miss A., aged 33, who had here formerly gone through a partial course of instruction extending over two years, but who had been removed in consequence of a violent outburst of temper, accompanied by personal violence, at one of the country branches of the institution, called on Miss B. (who was somewhat her senior in age), the managing superintendent at head quarters, in view to being again allowed to resume work. Miss B. assured her visitor that, whilst the lady superior had freely forgiven her, this could never be; for, it must be admitted that the final out-break in the country was but the climax

* While engaged on the above paper I found that Dr. Hughlings-Jackson had already arrived at the conclusion that insanity was a failure of adjustment of the organism to its environment, and in one of his published articles there is an incidental allusion to insanity as "a loss of the most highly special adjustments of the organism to its environment," a view not very far different from that advanced above. Having enjoyed the great advantage of a long experience in diseases of the nervous system in Dr. Hughlings-Jackson's clinic, I find it not always easy to separate the views which have been derived from his direct inspiration from those which I have arrived at by independent pursuit of the methods of thought which he teaches. In the present instance, having become acquainted with Dr. Jackson's views after the above paper was written, I am unable to fix upon him any responsibility for the views it contains, but I claim his nearly corresponding expressions as the strongest corroborative evidence of the approximate truth of my thesis.