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OUTLINE OF PSYCHIATRY IN CLINICAL LECTURES.*

PSYCHO-PHYSIOLOGICAL INTRODUCTION.

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I.

MENTAL DISEASES ARE BRAIN DISEASES, BUT YET DIFFER FROM THEM PRACTICALLY. PROJECTION SYSTEM AND CENTRAL PROJECTION FIELDS. ORGAN OF ASSOCIATION. BRAIN DISEASES TO BE DEFINED AS: DISEASES OF THE PROJECTION SYSTEM, MENTAL DISEASES AS DIFFUSED DISEASES OF THE ORGAN OF ASSOCIATION. CONTRAST OF PRIMARY AND SECONDARY IDENTIFICATION IN THE MATTER OF SPEECH.

THE subject for our consideration, the science of mental diseases, is, in reality, a part of internal medicine, but owing to its practical importance and for other reasons of a more extrinsic sort, it has at all times demanded and received

*Translated by Dr. W. Alfred McCorn.

special treatment. Unfortunately it is this part, which has been backward in its development and is now in the position occupied by general medicine a century ago. You know that then a developed pathology in our modern sense, *i.e.*, one based on the morbid derangements of function of individual organs, did not exist, and that therefore certain symptoms, which recurred with special frequency, if also in the most diverse groupings, were given the importance of disease types. At this stage the medical knowledge of diseases did not far exceed that now prevailing among the laity, when cough, palpitation, fever, jaundice, chlorosis and emaciation were considered true diseases. This is exactly the present state of psychiatry, at least among the majority of alienists, its representatives. Certain symptoms of special pregnancy form for them the real nature of the disease, so a depressed state of the emotions in the broadest sense the condition of melancholia, the exalted mood with an excess of movements that of mania, and the like. Now a whole multitude of these supposed diseases are differentiated. But as naturally the combination of symptoms is by far more varied and complex, so the necessity arises of making the artificial boundaries, first broader, then narrower, which has been done by different observers in very different ways; in spite of all efforts to bring the cases of disease artificially into a form, so that they fit into the scheme, there still remains a large number which cannot be adjusted and no way be made to fit. Indeed, he who judges impartially and possesses the requisite experience, finds that *the great majority* of cases will not conform to the usual mode of consideration. Therein I am pleased to admit that psychiatry has recently made a material advancement. The work of men like Griesinger, H. Neumann, Kahlbaum, Meynert, Emminghaus and others has not been in vain. But even these prominent investigators have succumbed to the temptation of confounding individual symptoms with the nature of disease, and how debased the average position of psychiatry is to-day can be estimated by the fact that the prevailing theory of insanity, whose merit consists of an easy nomenclature, now enjoys general recognition and

could be regarded, by a thinker like Meynert, *e. g.*, as an advancement.

Under these circumstances the teacher of psychiatry is apt to tarry too long with the symptomatology, if the standard of another discipline will be applied. But his task will be clearly defined, he will proceed as in the other disciplines of medicine and must deduct the symptomatology from the known attributes of the organ, of whose disease it is a question, *i.e.*, in our case from the attributes of the brain. Only in this way is the prospect offered us of gaining a natural, *i.e.*, based on its nature, and likewise exhaustive classification and comprehension of the symptoms.

The hypothesis that mental diseases are brain diseases, is now disputed by no one.* If we accept this, we must soon add: diseases of the brain of a special kind and special location; for they are in no way identical with the so-called organic brain diseases, which are far better known to us. If we bear in mind the classification of brain diseases into focal and general, mental diseases certainly cannot be included among the first, but perhaps among the latter. There are two general diseases which are included among the organic brain diseases: meningitis and progressive paresis. Nothing would hinder us from adding to them the mental diseases as a third category. But now the question arises: what are the fundamental signs by which this third category is differentiated from the other two so-called organic?

To get more into this question, we must occupy ourselves a moment with the symptomatology of brain diseases. All symptoms of brain disease are, as you know, either focal or general. The two general diseases of the brain designated, which belong to the organic brain diseases, are examples of those with prominent general symptoms in the clinical picture. But on the other hand they are characterized by the fact that focal symptoms also occur in them, indeed, it may be said they are never entirely absent; whereas mental diseases do not present these focal symptoms, consequently mental diseases represent general diseases of the brain

*Only a difference of opinion prevails as to how far they are of a functional nature or due to palpable changes.

of a special kind, as they are never accompanied by focal symptoms.

The importance, which the focal symptoms attain according to this definition in our subject, makes it seem advisable to keep their nature fully in mind. Through Meynert we have learned that the voluntary muscles and sense organs are connected with the cortex of the cerebrum by conduction paths, which extend in physiological continuity through the brain, spinal cord and peripheral nervous system. The sum of these paths, in which the law of isolated conduction prevails, he calls the projection system, and thus clearly and unmistakably expresses the fact of physiological continuity in contradistinction to anatomical continuity—a fact which by recent research is proven to be perfectly true. Corresponding to the division of the cerebrum into two hemispheres, the projection system is also divided into two halves, as is known, with the arrangement that motion and sensation of each half of the body is associated with the opposite cerebral hemisphere.* The expression "projection" is evidently borrowed from optics; as here the course of the rays through a system of lenses is to be followed exactly, so, in spite of all interpolation of ganglion elements in the paths of the projection system, the physiological continuity and isolated conduction are universally preserved. The majority of the focal symptoms may be readily traced to local interruption or stimulation of the conduction paths in the projection system.

A second series of focal symptoms may be traced to the fact that the terminal, respectively stations of origin, of the paths contained in the projection system are located in different parts of the cerebral cortex. The law of isolated conduction prevailing in them is thus extended to their anastomoses in definite cortical areas of the cerebrum. Such terminal stations of the projection system,—we will call them *projection fields*—are for example known for the optical tract in the occipital lobes, for the acustic in the temporal lobes, for motion and sensation of the leg, arm, facio-lingual region in the so-called upper, middle and lower thirds of the two central convolutions, for the motor speech tract in

*On the whole that applies at least.

Broca's convolution. Of course this does not imply that the mode of projection within this region causes nearly the same arrangement as is found in the fibres of a peripheral nerve. On the contrary we know that in the projection fields of the cortex, nerves lying far apart in the periphery unite in a common junction and cite, as the best known example, the projection field of speech in Broca's convolution. As we will see later, the matter of function must therefore be decisive as to the manner of their projection in the brain cortex, because only the functionating nervous system is connected with the cortex. Here is involved a second attribute of the projection fields: the projection fields of the cortex are likewise the places where the memorial images of the various functions of the nervous system are located. The localization of memorial images then follows the same principle, so that the occipital lobes are the places of the optic, the temporal lobes those of the acustic memorial images, the so-called middle third of the central convolution—the arm region—likewise contains the memorial images of the tactile impressions gotten by the hand. The fading of these definite categories of memorial images belongs to the focal symptoms of brain disease.

Therefore the focal symptoms prove to be characteristic throughout by the fact that they show the disordered function of the projection system, be it in its paths, be it in the projection fields of the cortex. Then the focal symptoms of the brain are all to be traced to functional disorders of the projection system, and its terminals in the different projection fields of the cerebral cortex, so mental diseases are distinguished from the two other so-called general organic diseases of the brain by the fact that the projection system and the projection fields are not thus affected sympathetically.

We are not as yet fully informed as to the extension of the projection fields in the cortex and their exact location. But it could be readily conceived that the advancement of our knowledge in this matter will show, that the entire cortex of the cerebrum is occupied by these projection fields. In our search for a locality, which is the site of the disease,

have we not then made an end to the brain and resorted to transcendentalism? Well, this is not the case, there is rather at our command, besides the projection fields, an anatomical basis of large extent, which we may claim, with good right, to be the site of mental diseases, namely the system of association fibres serving for the union of the projection fields. If this is so, mental disorders then are the special diseases of this organ of association.

We are forced to assume the destruction of these association paths in certain focal diseases of the brain; they form, in fact, the natural transition to mental diseases. A case of the sort occurs in certain rare examples of so-called transcortical aphasia.

For ages the hope has existed that in aphasia the starting-point would be found, which would pave the way to the comprehension of mental diseases. That this hope has not deceived us, that there are true cases of aphasia, which are the most intimately connected with known mental diseases, the patient, whose condition will now engage our attention, may prove to you.

This patient* now presents very plainly the traces of a severe mental disorder, which he had from 1885 to 1889. He stands and walks in a definitely fixed posture, but which has not hindered him from working at his trade as a cabinet-maker and comfortably supporting himself and his family. All the questions we ask him remain unanswered, or answered only by gestures. In fact he is entirely speechless and for five years has not been able to utter a sound. Still he understands nearly all that I say to him, as you can plainly see by his gestures and the execution of requests made of him. Still if I ask him certain other questions or make certain other remarks, he plainly shows that he does not understand them. Consequently he does not possess perfect comprehension of language, but only to a certain extent—always the same,—while he has entirely lost the motor function of speech.

This state of complete motor and partial sensory aphasia has developed from a definite mental disease, which for the

*Verhandlungen des Congresses für innere Medicin. Wiesbaden 1890, p. 272.

present I will call a motor psychosis and has then continued as a permanent defect. In the course of this disease mutism and verbigeration occurred temporarily, two psychotic symptoms, which also affect the domain of speech.*

If we try to get a better comprehension of this connection, we must keep in mind the different forms of aphasia, which are established by clinical observation. For this purpose follow me for a moment to the neighboring province of the so-called organic brain diseases.

Two projection fields of speech are known, a motor and a sensory. The motor (*m*) is the place of origin of the motor speech path (*mp*), a part of the projection system, which leads to the nerve nuclei of the medulla oblongata participating in speech. It is also the seat of memorial images of movements occurring in the act of speaking or motor speech ideas. The sensory speech field (*s*) contains the central termination of the sensory speech path (*sp*) and also of the acustic nerves, but it is likewise the site of the memorial images of speech clang or, as they are called by Helmholz, the clang images of the words. The clinical picture of motor or sensory aphasia occurs accordingly as the motor or sensory projection field is destroyed.

But we will now waive consideration of our patient for a moment, who is in fact an anomaly, for the insane are not aphasic as a rule. The sensory speech path and the sensory speech field are usually intact in the insane, they can understand all that is said to them. They are also in full possession of their motor speech function, in so far as it depends on the integrity of the motor speech path and the motor projection field. Nevertheless we find the striking phenomenon, that the answers of the insane are often irrational and irrelevant, or seem to have no relation to the question asked. How is this phenomenon to be explained, must we still hold to the presumption that the correct answer is the expression of normal brain function? Here there is only the one explanation, that the function of those nerve paths, which pass between the two projection fields,

*The temporary speechlessness of the insane we call mutism; verbigeration the monotonous, usually rhythmical repetition of one or some few words.

must be disordered. Hence insanity appears to us to be a disease of the association organ. But remember that in the current scheme of aphasia, those association paths are made use of, in that the sensory speech path *sp* and likewise the motor *mp* are regarded as continued through the cortical regions (projection fields), *s* and *m* to a supposed concept centre *C*. The transcortical paths *sC* and *Cm* are simply association paths, and in their province the functional disorder must be located, which is manifested in the improper answers of the insane. But every mental disease, in so far as it is manifested in the patient's perverse assertions, is for us an example of transcortical aphasia. The curious case of aphasia, in consequence of a mental disease, from which I started, suggests the assumption that under certain conditions all the parts *Cm* and a great part of the paths *sC* may be interrupted in the course of the disease. Then a real aphasia, of the same sort as in our patient, will probably occur.

The assertion of a concept centre *C* in the scheme of aphasia has often been misunderstood. But that it was not to be avoided and therefore requisite is shown by the following consideration. Sensory aphasia from destruction of the projection field *s*—cortical sensory aphasia, as I have called it, is characterized by the patients losing the memorial images of the speech clang and consequently the words are not recognized when heard again. But for the comprehension of language evidently more is demanded than for the recognition of the word clang: the proper sense must be united with it. If we maintain the antithesis of word and concept, we can only mean that some of these paths pass through the cortical centre *s* to other cortical regions, which represent the related concept. In reality this supposed concept centre is distributed to places in the cortex widely separated. But it shows the necessity of differentiating two entirely different processes with respect to the comprehension of language. The one, the recognition of the word clang images, depends on the retained function of the projection field *s*, which we will call *primary identification*. The other process, the rise of the concept joined to the

word, depends on the function of association paths with this supposed concept centre. We call it *secondary identification*. If we compare the whole process with that of sending a despatch, as others have done, then *s* is the station where the telegram is received, but the real recipient is represented by *C*. The relation of *C* to the motor projection field of speech in *m* is very similar: here *C* is the real sender, but *m* the telegraph station from which the despatch is sent. In other words: the sense, the concept of the word rises, and it needs to be conducted by anatomical paths to the motor projection field of speech *m*, for the word to be spoken.

If we call the mutual relations of *C* to *m* secondary identification, as we have a right to do in reasoning from analogy, so as the result of our consideration, the proposition follows: The peculiar utterances of the insane are signs of disordered secondary identification.

Progressive paresis must be assigned a very exceptional position among mental diseases; it can, as has happened, as well be included among the organic brain diseases. But still without doubt it is a mental disease. In the very frequent cases where it presents marked focal symptoms, foci are actually demonstrable, in which the otherwise diffuse disease process affects the projection system and the projection fields. But exceptionally there are cases of progressive paresis, where such focal symptoms are only intimated, for these then show the paramount transcortical character of the disease.

The comparison of aphasia with the speech symptoms of the insane has taught us that a disorder of secondary identification may be the common basis of mental disease and certain cases of aphasia. The harmony of the two diseases is explained by their like location in transcortical or association paths. We will discover their difference in that the mental disease affects, with individual choice, these paths separately, whereas the focal disease destroys compact masses. Exceptionally the general result of individually diseased paths is the same as that of a focal disease, and then a transcortical aphasia may follow a mental disease.

Thus from the special location we postulate a special

kind of disease: this is characterized by the fact that it differentiates, in a certain measure similarly to degenerative neuritis, the individuals among the association elements, and, as we presume for the present, according to the analogy to degenerative neuritis, according to the form of the different function.

II.

CONCEPT CENTRE TO BE REPLACED BY SOME LOCALIZED IDEAS. INITIAL IDEA AND TERMINAL IDEA IN THE SPEECH SCHEME. GENERALIZATION OF THE SPEECH SCHEME. KINDS OF MOVEMENTS: EXPRESSIVE, RELATIVE, INITIATIVE. DISORDERS OF SECONDARY IDENTIFICATION ARE PSYCHOSENSORY, PSYCHOMOTOR OR INTRAPSYCHICAL.

Our previous speculation has demonstrated to you the contrast which exists between brain diseases and mental diseases, as soon as we observe the province of speech. In fact the pathology of speech forms one of the most familiar chapters in the province of brain diseases. The utterances of the insane again comprise such a large part of the symptomatology of insanity, that from this alone the right can be deduced to consider the insane at present from this single point of view. I hope that your understanding will be facilitated for the following exhaustive discussion by the fact that we hold to the simplified conditions of our example.

We have to occupy ourselves still further with the (voluntary) fiction of a concept centre *C*. The advancement, which our clinical knowledge has gained from aphasia, shows most plainly that this present assertion was indispensable for the extension of our knowledge. To trace it to its true value I have only hinted at heretofore. Permit me to carry this suggestion somewhat further.

As I have said above in speaking of the central projection fields, we can consider it an assured fact that memorial images and ideas* are localized, *i.e.*, joined according to the content to different anatomical regions of the cerebral cortex. This localization could be disregarded in the scheme of

*See below for the different use of these two terms.

aphasia, and with some propriety the standpoint could be taken, that the receiver and sender of any dispatch in the imaginary concept centre *C* would be identical with all the rest of the brain cortex and, as we must again say, the association system belonging thereto, so that the two projection fields *s* and *m* are brought into an artificial opposition to all the other projection fields. On this oppositional position depends then the differentiation of the terms cortical, which relates to the two projection fields *s* and *m*, and subcortical or transcortical, according as it is a matter of paths, which lay on this or that side of these definite projection fields. By this view the anatomical idea was implicitly given that the sum of the transcortical paths *sC* and *mC* could form a compound column, accessible to destruction by focal diseases, in the immediate vicinity of the two projection fields *s* and *m*, while they must be regarded as radiating to the most diverse regions of the cortex. The clinical picture of transcortical motor and sensory aphasia seems to have been due to the rare accident that disease foci exactly invade the postulated site. That these rare cases are included among the focal diseases of the brain, will be entirely comprehensible. On the other hand the observation of a patient, whom I have presented to you, proves that such disease types can occur in the course of a typical mental disease, and so form a natural transition to mental diseases.

It is essential to our purpose to really refrain from such rare occurrences. But if we stick to the chosen example and hold only to the principle of localized ideas, so we appropriately divide the centre *C* into two localized ideas joined by an association path, which we will term *A* and *Z*. *A*, the *initial idea* is united by an association path *sA* with the sensory speech field. *Z*, the *terminal idea*, is united by a similar path *Zm* with the motor projection field of speech. *AZ* is the association path. The scheme thus changed corresponds somewhat to the process occurring when an arithmetical problem is given the patient. Its comprehension occurs in the initial idea *A*, its solution corresponds to the terminal idea *Z*, and when this is spoken, the

innervation from *m* occurs. Between problem and solution complicated trains of thought may occur, thus showing that the association path *AZ* may be conceived as divided many times. No special proof is needed that normally the whole process conforms to law, in a certain measure by previously formed paths, so that the result can be foretold. We can for the present assume that it is just the same with any question: the comprehension of the question is represented by *A*, the sense of the answer by *Z*, and the path inserted between embodies the fact that the answer arises from a more or less simple reflection. If we do not suppose the intention of being led astray, so must we recognize in this case in normal persons, the answers will occur in a very definite sense, which accordingly may be known before with approximate accuracy. The conformity to law, which may be here observed, depends, as we shall see later, on the principle of the beaten paths.

The previously maintained example admits of an extension, by which it may become the foundation of the whole symptomology of mental diseases. We have only to replace the projection fields of speech by any other projection field. In the place of speech utterances any motor manifestation then occurs, and *m* represents this projection field, accordingly as the movement occurs in the arm, leg, back regions, etc. The central projection field of a sensation replaces the sensory speech field. In fact it occurs the same in seeing as in the comprehension of the spoken speech clang. Here also the primary identification takes place in the central projection field of the optic nerve, but for the comprehension of whatever is seen the conduction to other projection fields, secondary identification, is essential. Without this secondary process the sight impression is lost to the one receiving it and remains unintelligible, like the impressions of hearing in transcortical aphasia. And this is true, as slight reflection shows, of all sense impressions.

That this generalization of our scheme is permitted, even demanded, a closer inspection of our original example teaches. The answer, which I expect from the patient, does not need to be spoken; it may be written or com-

municated by silent pantomime and gestures, or in the performance of any chosen command. According to the muscles engaged in its execution, the projection field *m* will have a different significance and correspond to different places in the cortex. On the other hand my question, respectively my command, can be given without a spoken word, either by writing, pantomime, expressive movements of the hand or the like.

A short time ago I said that our scheme with the proposed modifications can aid in the deduction of the symptomatology of insanity, in so far as it consists of the patients' movements. But then this limitation is only necessary when we exclude from the movements the speech utterances, pantomime, attitude and all those manifestations of the patient within the province of expression, as corresponds to ordinary parlance and the views of the laity. But in the last instance there are also movements which are utilized for judging of the inner processes of an insane person, and for scientific consideration it would be an error to neglect this condition. And the more you really see of the insane and become acquainted with their symptoms, the more you will be convinced that finally nothing else is to be found and observed but movements, and that the general pathology of the insane consists simply of the details of their motor condition; for as a matter of course the loss of movement may be just as characteristic as its occurrence.

We conclude from movements as to the processes occuring in the consciousness (in the organ of consciousness) of another. If these movements are those of speech, so this fact is much more tangible and evident than all the other movements. The symptomatology of the insane has then for its subject the movements, in so far as they seem to be the function of the organ of consciousness, in other words of the organ of association. We here find only the single reservation, which impairs the universality of the proposition. There are of course motions, which are independent of consciousness, like those of vegetative life, of the heart, respiration, the vascular walls, viscera; as well as

the majority of reflex movements. As we will see later, these movements may be affected sympathetically in the insane, but then do not form the real object of observation. We will further find that in rare cases the state of the temperature and in almost all cases that of the nutrition, as expressed by the body weight, is of great symptomatic significance. But the exceptions are thus exhausted, and we will see that they are all to be considered secondary and in their turn possess a conformable dependence on the motor manifestations of the patients.

We are then justified in disregarding the exceptions enumerated, and have merely to keep more closely in mind the movements as functions of the organ of consciousness. A classification according to practical points of view is essential. Therefore we distinguish expressive, reactive and initiative movements. As we will see, this classification has the advantage that it embraces the sum of all possible manifestations of motion, and therefore it is to be preferred to Meynert's classification into movements of defense and offense, however portentious and fruitful this has proven in other respects,* it is defective and needy of improvement, in that a sharp boundary line between the three kinds of movement is often impossible. It is in the nature of the affair that certain movements of the one province come under another, that, according to the observer's standpoint, it may be a matter of dispute into which province a certain movement is to be placed. However, for the present we hold to the classification, because it has stood the test in the clinic of mental diseases.

By expressive movements we understand especially all those by which the affects and emotional state of a person are manifested. The speech movements largely serve this purpose, but not exclusively, and as far as they serve, they are speech movements in the broadest sense, so that they include, *e.g.*, the plaintive tones and the groans of pain. Words, which especially serve this purpose, are, as you know, the majority of interjections. Laughing and crying are specific expressive movements, like general pantomime.

*See his Sammlung populär-wissenschaftlicher Abhandlungen.

But the expression of the face while at rest, depends on certain muscular actions, and also the attitude of the whole body, which may betray, as well as words or pantomime, the person's affective state and affective condition. The movements of the entire body, serving for the expression of joy, mirth, arrogance, egotism, scorn, anger, anguish, sorrow, trouble, despair, hope, hatred and love are sufficiently known and appropriate that it will be unnecessary to describe them here. Normally the person awake is always animated by an expression, therefore we have become acquainted with lack of expression as an important clinical phenomenon.

The reactive movements are those following actual external stimulation. A person's answers to questions, regardless of their content, are always to be regarded from this point of view of reactive movements. Also an answer, which does not consist of words, but of other expressive movements, when the person questioned, with a significant mien, places his finger to his lips, comes under the conception of reactive movements. The absence of an answer may often be regarded as a significant symptom. The reactive movements, which are of great significance in the clinic of mental diseases, are especially the patient's conduct during the physical examination, toward the little favors shown by the nurses, toward requests of any kind, on the approach and greeting of the physician, toward the entirely changed situation in the rooms of the asylum. Also those movements, which are necessary for the gratification of the bodily wants, although they are to be traced to internal stimuli, must be included among reactive movements. It might, however, be proper to add the last category of movements to the initiative, while again many of the former at the same time fall into the province of expressive movements. At any rate it is to be again stated, that the absence of reactive movements is just as characteristic and valuable as a symptom in the insane as their morbid modification.

By initiative movements we understand all those which arise spontaneously and are not due to an actual external stimulus. This negative definition includes a part of the

expressive movements, while another part belongs to the reactive. We will then always have to judge of the expressive movements, whether they belong to the initiative or the reactive. It might be asked, whether there are really initiative movements, *i.e.*, those, which occur without any external cause; for usually an external cause may be demonstrated for an apparently spontaneous action. But such causes often have only the significance of exciting causes and recede in their importance before the preponderating internal motive, so the assertion of initiative movements is justified. In general the initiative movements consist usually of a whole series of individual motor processes and then are to be called actions. The whole conduct, behavior, actions of a person in a certain situation, all his movements, so far as they are not expressive and reactive movements, belong to the initiative.

The nerve excitation, which takes place over the path *sAZm*, may be compared to a reflex process and this path called a "psychical reflex arc." The movement innervated from *m* then appears as the result, as the tangible consequence of this process of excitation. The clinical method of psychiatry consists in studying the final result, in drawing a conclusion from the process as to how it occurred.

As you will likewise notice, it is really the reactive movement alone, which may be compared in this way to the reflex process. If the reactive movement may now consist, as in the example we started with, of a spoken word or any other movement, it may always be very readily considered a consequence of an external stimulation, an external impulsion depending on processes of motion. How is it then with the other kinds of motion, the expressive and initiative? Evidently these also permit of the same consideration; for with the exception, that in initiative movements it seems questionable, whether they occur entirely without external cause, we will be justified in replacing the external stimulation by the memorial images of past stimulation and in every case, where the present external stimulus is wanting, to consider those memorial images as initial members of the movement occurring in the psychical reflex

arc. We may even go so far as to use the existing movement as a proof of this assumption. For as it is not conceivable without a cause, while an apparent cause is wanting for the movement, the actually existing movement can only be due to a force treasured up somewhere. But these supplies of reserve force are memorial images, as we shall see later.

After these preliminary remarks we are now able to familiarize ourselves with the morbid derangements of movement, which are observed in the insane. They all depend on disorders of secondary identification, as I have above shown. But still I must remind you, that we have considered as secondary identification, not only the relation of *s* to *A*, *i.e.*, of the nearest sensory projection field to the initial idea, but also the process of excitation proven in the inverse direction of conduction from the terminal idea *Z* to the motor projection field *m*. We were justified in this, because the path *Zm* is an association path, as well as the other *sA*, and in these association paths the physical process occurring in them must always be identical, in whichever direction it occurs. For the same reasons we can also infer the relation of *A* to *Z* to secondary identification.

As it is always a matter of nerve paths, so a morbid change of excitability, respectively capacity for conduction, is always to be based on the disorder of secondary identification, and all possibilities are exhausted, if we keep in mind the three cases of lowered excitability, respectively capacity for conduction, increased excitability and perverse excitability. We will call the path *sA* psychosensory, the path *Zm* psychomotor, the path *ZA* intrapsychical. The possible cases are then contained in the following summary:

Psychosensory	*Psychomotor*	*Intrapsychical*
Anæsthesia	Akinesis	Afunction
Hyperæsthesia	Hyperkinesis	Hyperfunction
Paræsthesia	Parakinesis	Parafunction

The objection may be raised against this, that there are always disorders of motion, which oppose us in the insane, as I have stated, and that therefore the whole symptoma-

tology is exhausted in the three cases of hyperkinesis, akinesis and parakinesis. This objection is justified in a certain sense, and needs an exhaustive discussion. It is the easiest to refer it to the example of conversation, with which we started. If the patient is silent when he should speak, we will be able to consider this symptom a circumscribed form of akinesis limited to the province of speech. If he presents the symptom of loquacity, it is likewise a circumscribed form of hyperkinesis. Whereas, if his answer is nonsensical in its purport, so one will be justified in ascribing this to parakinesis, but still a closer inspection would always be necessary, because then a certain misconception is to be expected and presumed. For practical reasons we will always be obliged to differentiate two entirely different things in the act of speech, namely the motor act as such and the purport of the works spoken. But as there are now really morbid modifications of the act, or as we may term it, of the formal part of speech, so it would be the more correct to employ the word parakinesis in this restricted sense. We have an example in the symptom of imperative speaking and the monotonous repetition of the so-called verbigerator. The same consideration, that the content must be differentiated from the formal part of movement, applies to all the expressive, as well as to the reactive and initiative. As it is possible for a patient to utter the veriest nonsense in formal words perfectly correct, so the expressed affective condition in language perfectly correct can of itself be of a morbid nature, as well as his acts formally correct, but false in content. In all these cases then we will not assume a disorder of the psychomotor identification, but be constrained to seek the derangement in more remote parts of the psychical reflex arc. This corresponds to common parlance and the usual view, in that the means the patient uses to communicate his feelings, express affects, etc., are generally overlooked completely as self-evident affairs. After this discussion you will comprehend that in the insane, we often find symptoms of disordered identification, when the motor mechanism itself is perfectly intact.

III.

NATURE OF MEMORIAL IMAGES. AFTER-IMAGES OF THE RETINA AND OPTICAL MEMORIAL IMAGES. THE ASSUMPTION OF SPECIAL PERCEPTION AND MEMORY CELLS DO NOT SUFFICE FOR EXPLANATION. LOCAL SIGNS OF THE RETINA. IDEAS OF SIGHT.

Ere I can introduce you further into the symptomatology of mental diseases, I must again return to the concept centre, so often mentioned, or rather, as you can apprehend more correctly, to the localized memorial images. You have become convinced, I hope, in the course of the discussion, that the presumed concept centre, as well as the concepts themselves, is incapable of localization in a certain sense.

In the introduction to my first lecture I have asserted as a fact, confirmed by the experiences of pathology, that the central projection fields are localized in different territories of the cerebral cortex. We must likewise ascribe to them the attribute of being places of memorial images, whence then a definite localization of the memorial images was to follow. We will have to make ourselves better acquainted with the nature of these memorial images.

I might very briefly cite the clinical facts, which, in my opinion, completely prove the principle of localized memorial images: they are the clinical experiences of sensory and motor aphasia and the cases of so-called tactile paralysis of the hand. The first are now so well known that I need not go into them, but the latter must be especially considered as to their significance. Here are two series of facts, which by their relation to each other, furnish the evidence. Cases of circumscribed cortical injury in the region of the so-called middle third of the two central convolutions, which leaves as a permanent defect the inability of the hand to recognize objects by touch, while real so-called sensory disorders are demonstrable only to a slight degree. Conversely, cases of spinal or peripheral disease are observed, which are accompanied by the gravest disorders of sensation, and, as I have especially shown, also of the so-called muscle sense or sense of position, and yet present only

insignificant disorders of the tactile function. The last cited cases in a certain measure prove that even a very defective and faulty projection system conducts reports to the brain, which suffice for primary identification, if only the central projection fields and hence memorial images, tactile images, as we may call them in the preceding case, are retained. But the cases of the first kind can only depend on loss of the primary identification, if disorders of the projection paths are so slightly demonstrable. The principle of memorial images localized according to the projection fields is placed beyond doubt by such facts, and hence its application to all projection fields is warranted.

If we return to our example of the organ of speech, we find the process of *recognition*—primary identification—joined to the hypothesis, that a fixed possession of memorial images is present. So the question arises: How is such a possession brought? Evidently it is a matter of a very special attribute of the nervous system, that it undergoes permanent changes by temporary stimulation, an attribute which we call *memory*. The memory of the nervous system is manifested, *e.g.*, in that the faradic excitability of a nerve can be increased by frequent faradisation* The same stimulus later acts more readily, when it has often occurred previously, so that then a permanent change has taken place in the nerve, in consequence of temporary stimulation. All dexterity depends on this principle, all accomplishments. Paths, which were only passable with difficulty, become readily passable by repeated use, they become hollowed out, so to speak. Now, if such a memory is perceptible in the nerve fibres, it is very especially attained in the nerve cells or ganglion bodies. A reflex in the spinal cord, which is effected by these ganglion cells, occurs the more readily, as the more often it has previously taken place, and that it is here a matter of a special attribute of the ganglion cells, has been proven by the researches of Ward,† Jarisch and Schiff‡ and others. The after-images of the retina have

*Mann, Deutsches Archiv für klinische Medicin. 1893.

†Ueber die Auslösung von Reflexbewegungen durch eine Summe schwacher Reize, Du Bois-Reymond's Archiv. 1880.

‡Untersuchungen über das Kniephänomen. Wiener med. Jahrbücher. 1882.

with good right been referred to the ganglion cells. In the brain cortex it is in the ganglion cells, to which must be especially ascribed the attribute of being permanently changed by momentary stimulation, that residues of it remain, which we call memorial images.

After what has been said it seems self-evident that the possession of memorial images or *content of consciousness*, as we will call it, is directly dependent on the condition of the projection system and the sense organ, by means of which it has been acquired. The consciousness of a weak-sighted person, or one with generally poor senses, is therefore different from that of an individual with normal senses. The person born blind will not be in possession of optical memorial images and therefore, in case he can be operated upon, will represent a state, which is also known to us from its pathological occurrence as the so-called mental blindness. Like the person born blind, the one born deaf has a content of consciousness, which is defective in a whole category of memorial images derived through the sense of hearing. In partial brain defects, as they have occasionally been observed in imbeciles from birth, who likewise have a sense defect, *e.g.*, are deaf, the same absence of memorial images is seen as a consequence of the defective formation of the central projection fields. No less instructive in this respect is the comparison of the animal brain. As is well-known, man has only stunted olfactory lobes, while many families of mammals possess those constituting a considerable portion of their cerebrum, have a special ventricle and are covered with several superficial convolutions. How the consciousness of such an animal, *e. g.*, the dog, differs from ours, daily observation teaches. It is filled with olfactory memorial images, in which the animal, sniffing about, manifests all the signs of a pleasant affective condition, like the epicure at the table, or the artistic eye at the sight of beautiful forms. The content of consciousness in this way shows its dependence on the condition of the projection system and the central projection fields, a condition, which permits the statement: Consciousness is a function of the central projection fields. If the assumption is confirmed,

then the further proposition is allowable: Consciousness is a function of the cortex of the brain mantle.

If we now seek to further understand what we have to conceive by a memorial image, we will do well to keep in mind a definite example, like the optical memorial image. For this the comparison with the after-images of the retina is especially apt, which belong to the same sense province. How far is the comparison pertinent and warranted? As we have above seen, it is the ganglion cells especially, in which we trace the after-images of the retina to excitement outlasting the stimulus; by a definite arrangement of these stimulated cell elements an image arises, which we are able to project into a definite space. This image is of a very limited duration in point of time. There is nothing to prevent the assumption of such cell elements in the central projection field of the optic nerve, we call them perception cells, in which the projection fibres first terminate. Would the assumption that the memorial image consists of the re-echoed excitement of the perceiving elements sufficiently explain the evident difference existing from the after-images of the retina? Much speaks against it. According to my experience at least, the attribute of spatial projection is completely absent in optical memorial images. They seem to me projectable into space only so far as they take a definite position to the person. Besides they appear to be of unlimited duration. The last distinction is especially important. It may be hard to conceive, that the same perceiving element, which has once been used, should retain its permanent state of excitement, nevertheless it can soon after be engaged in a new perception from an entirely different stimulus. It would really be expected that it behaves similarly as with after-images, and that at least the subsequent process of excitement always obliterates the preceding. We assume, *e. g.*, it is a matter of the optical memorial image of a letter or a number. It can be accepted that for the origin of these memorial images, such retinal images, will essentially prevail, as occur at the place of the keenest vision, or very near it. Here only are the greatest number of sensory elements united, but the optical apparatus is

also very accurately adjusted for the images of this region, so that the sharpest images can occur here. Accordingly Nature has so arranged it, that for visual impressions, which excite our attention, the place of keenest vision is adjusted wholly involuntarily by proper eye movements, an impulse, which in the adult renders it very difficult to completely control his eye movements. Consequently many of the same retinal elements, which previously represented the image of the letter, will soon be demanded for the production of a new image, *e.g.*, the number, therefore the cells of the central projection field serving for perception. The assumption is wholly permissible and even probable, that the place of keenest vision in the retina may occupy relatively a very considerable space in the central projection field. The difficulty of explaining, under these circumstances, the memorial image by a special memory of the cells, is therefore unchanged. It has been attempted to overcome it by differentiating perceiving and remembering ganglion elements and ascribe to the latter this special attribute of memory. Only the elements serving perception should represent a cortical projection corresponding to the points of the retina. However it seems to us the difficulty is not overcome by this assumption alone. The distinction between perception image and memorial image does not depend so much on a difference in the active elements, rather in that the common arrangement of the retinal elements concerned, or the *form of retinal excitement* is different in the different images, while the same retinal elements may have predominantly cooperated in their origin. But the memory of the like mutual arrangement of the functionating elements or, in other words, the form of excitement, completes the psychological concept of the memorial image. I fully concur with Sachs* and Goldscheider,† that the assumption of an acquired functional union of simultaneously excited perceiving elements by means of existing association paths is able to explain this special memory of the form of the retinal image, of

*Vorträge über Bau und Thätigkeit des Grosshirns. Breslau 1893.

†Ueber centrale Sprach—Schreib-und Lesestörungen. Berlin. Klinische Wochenschrift No. 4. 1892.

the common arrangement of the stimulated points in the retina. When the same order of stimulation occurs and the retinal image is again recognized, the process may be conceived, as Ziehen* has done, that from the perceiving elements the memorial image is excited, because only the cell combination concerned is in a certain measure sensitive to this form of excitement (somewhat as sound-resonants respond only to definite combinations of tones). But this shrewd conception also depends on a comparison and does not relieve us of the necessity of explaining the fact of this "sensitiveness," and so we need the combination of perceiving elements by fibres or the process of association. We will see later, that an association of different sense impressions always occurs, when they have taken place simultaneously; just as we can here assume that the simultaneously excited perception cells serving perception are associated with each other and, because on renewal of the same sense impression, the like form of arrangement is always renewed, also remain associated. The memorial image then would be simply an acquired association of perceiving elements of the central projection field.

You see that in this conception the assumption of special memory cells is indispensable. In fact there are entirely different reasons, which have a bearing on this. I will only say here, that it would not be very comprehensible why the sensory activity leaves the memorial images, if the perceiving elements alone could be implicated and definite retinal points always corresponded to them. Also that the memorial images are not projected into space, like the after-images, then remains incomprehensible. Finally the structure of the central projection fields in the cortex cannot be considered a contrary reason. A simple layer of ganglion cells, which are all connected by projection fibres, would satisfy the previous assumption. But in the cortex we everywhere meet with such a number of superimposed ganglion cells, and more so still in the optical projection field of the occipital cortex, that they by far exceed the number of projection fibres. All these considerations we will

*Leitfaden der physiologischen Psychologie. Jena. 1891.

have to make use of in the future. In the meantime we claim that we are finally able to trace to an anatomical distinction the demonstrable differentiation between memorial images and the after-images of the retina, namely, the durability of the first, the instability of the latter: *the cortex has association fibres, the retina has not.*

If the stability of the memorial images can be explained by the repetition of the same order of stimulation and this proposition can be applied to the special case of optical memorial images, we soon meet with certain difficulties. The retinal images, which are produced from concrete things of the world, are first large, then small, accordingly as these are near or far, but we must consider their memorial images as units. The mutual arrangement of the retinal points remains the same, and the images will be regarded as perfectly congruent, so that still corresponds to the psychological requirement, which we must place on the memorial image. But there are always different retinal points, whose arrangement in one and the same memorial image must be represented, and even in the simplest assumption, that the object is fixed, numberless images of different sizes, if also congruent, would always appertain to a memorial image. This difficulty is gotten over, if the intelligent hypothesis of H. Sachs is accepted. According to it the so-called local signs of the retina are determined by two factors, namely, the meridian in which they lie, and their distance from the central point. For each half meridian of the retina a special muscle arrangement is required, by whose cooperation the eye ball is turned so that the source of light falls on the macula. This muscle combination is the same for all points of the same half meridian, only the amount of innervation varies and increases with the removal of the retinal point from the fovae centralis. Whereas for the different half meridians the muscular arrangement is always different. The varying size of images of fixed objects then depends alone on the sensation of innervation of varying intensity, while the anatomical factor, the combination of different muscle effects, remains the same. In other words, this retention may be expressed as follows,

and transferred to the relations of the cortex. The perception cells of the central projection field associated with the retinal points of any half meridian have collectively the same associative connection with a definite point of the central projection field of the eye movements. We must consider the latter divided into as many different muscle combinations ("ideas of eye movements"), as there are half meridians in the retina. That is, of course, to be understood *cum grano salis*, as it is a matter of continuously graded series of muscle representation, not of special points. If this view will be taken into account, the optical memorial image is characterized, besides the attribute we have become acquainted with, in that the perception cells constituting it are associated with definitely localized ideas of motion of the central projection field of the eye movements. By repetition of the same visual perception, besides the association of the perception cells with each other, one between the corresponding, also localized ideas of movement, occurs. We will call the thus broadened concept of the optical memorial image visual idea. We now see that in spite of changed size of the image, the last named components of the visual idea remain the same, when they refer to the same object. That the same considerations apply to the retinal images, whose position is asymmetrical to the central point of the retina, you can see from Sachs' book, whose perusal I cannot too urgently recommend to you for the introduction to our subject.

A second difficulty, which is not to be misconstrued, consists in the different initial position of the object, of which distinct images are produced. An equilateral triangle, a cross are again recognized, whether the triangle now stands on its base or apex, the cross is upright, oblique or lies down. How can the same memorial image occur? To this is to be replied: by far the largest number of objects of the world and in consequence of this their retinal images, do not present this difficulty, for they have a fixed position with respect to our eyes. In comparison to these are the objects movable and changing their position, respectively retinal images on the one hand in the minority, on the

other they usually have a definite, habitual position with respect to our person. If we still take into account the ability of our eyes to so place themselves that a known image appears again, so the difficulty arising from the changing position of objects will be but slight. But it cannot be denied, that under certain circumstances the memorial images are not numerous enough to identify objects occurring in strange positions. We do not recognize inverted letters; several well-known optical illusions depend on the same defect, and how strange seems to us the image of a person walking about when seen through a convex lens, and is thus inverted!

Admitted, that by this consideration several difficulties are removed, still the great number of cell groups required to harbor the optical memorial images alone will seem enormous. Yet experience teaches that the healthy brain is still able to acquire new memorial images, then an abundance of elements serving this purpose must always be present. I will soon call attention to a miscalculation, which perhaps may make this difficulty appear exaggerated: as I will show later, we are inclined to overestimate the number and variability of concrete things of the world; in like degree we consequently underestimate the frequency of the recurrence of the same impressions.

IV.

THE CONCRETE CONCEPT AN ASSOCIATION OF MEMORIAL IMAGES. CONSCIOUSNESS OF THE WORLD. NUMBER OF CONCEPTS. NECESSITY OF CASUALITY.

As we have found that the optical memorial images are acquired associations of perceiving elements of the central projection field, and that the form of stimulation determines the kind of this association, we are justified in transferring all sense provinces to the central projection fields. The acquirement of memorial images depends very generally on the attribute of the central projection fields, that their perceiving elements, *i.e.*, those ganglion cells which are directly united with the projection fibres, are united with each other by association fibres, the special fibres of each projection

field. In the future we will speak of olfactory, acustic, tactile and gustatory memorial images, without going further into their nature. But I must especially call your attention to the fact that each sense province offers special problems,* and that these simplest psychical elements, the memorial images, may be of a complicated sort. By virtue of this possession of memorial images recognition, primary identification, occurs. If we limit ourselves for the sake of simplicity to the concrete things, which alone form the material for sense perceptions, we thus gain a content of consciousness, which is the sum of the memorial images of concrete things. It is now readily conceivable that within this sum definitely fixed groupings are to be differentiated, which always correspond to the attributes of a definitely concrete thing. One and the same concrete thing generally gives rise to several sense perceptions always recurring in the same way. The coincidence of these different sense impressions causes their memorial images to be associated. In this way to every concrete thing an acquired association of memorial images of different senses corresponds, and this association is the more stable, as the more often the same concrete object comes within the scope of our senses. In this way we gain an anatomical basis for those psychological qualities, which are now called *concepts*. We are now able to differentiate the stability and extent of the concept, but in concrete things we can differentiate essential and non-essential attributes, accordingly as they are always inherent to the thing or changeable. The extent of the concept of course extends to the non-essential attributes, as they must always show a certain constancy dependent on the nature of the thing. Of each concept, as is readily conceived, a curve might be constructed, in which the extension ("extent of the concept") would be shown by the axis of the abscissa, the intensity ("stability of the concept") by the height of the ordinate.

We must therein perceive the nature of secondary identification, as contrasted with the primary, that from each individual component of the concept the sum of all the

*See Ziehen.

others, i. e. the whole concept may be excited. The anatomical basis for the acquisition of these functionally homogeneous groups of cell elements is the presence of the association fibres between the different projection fields. We will call these transcortical association paths, as contrasted with the transcortical fibres of each projection field. The content of consciousness, which we have now become acquainted with, embraces then the concepts of concrete things, or, as we call them, the *concrete concepts*. The sum of these concepts we may distinguish as *consciousness of the world*, for in these concepts, in fact, we possess a true picture of the world.

As you will soon notice, in the consciousness of the world is contained the apparatus for simple processes of deduction, it is the same as also serves for secondary identification. From words I have heard, from the bark of a dog, from a definite odor, I deduce the presence of a person, a dog, a certain flower. Almost all deductive processes, which refer to the nature of concrete things, are of similar nature and then, as we have seen, only individual cases of secondary identification.

The content of our consciousness consists hence not only of memorial images, but second of very definite complexes of memorial images firmly united with each other by association, the concrete concepts. The number of concepts corresponds to the number of concrete objects. Perhaps it astonished you, when I said that only some few and always the same objects would come within the scope of our senses. Do not, you may ask, the things of the world in almost infinite number and indescribable variety come within the scope of our senses? Fortunately there is a very definite answer possible. The number of words gives us an idea of the number of concepts: of the number of these concepts, which a certain individual possesses, by the number of words he uses. One of the most comprehensive minds that ever lived or will live, is without doubt Shakespeare, his vocabulary was consequently unusually large: it amounted to fifteen thousand (1). How much we must deduct from that, when we will limit ourselves to the concrete things of

the world! Not everyone is a Shakespeare, but it will astonish you if we go to the other extreme (within the civilized nations!): the vocabulary of an English sailor is not over a few hundred. The number of concrete things is then not so large, their variety not so significant, as we are really inclined to estimate, especially when the number of ganglion cells in the brain cortex is stated, according to Meynert's calculation, a thousand millions. Still the same concrete object must proportionately come within the scope of our senses extremely often, for in this way a firm union of definite memorial images must arise of what we have called concepts, will now seem intelligible to us.

It now appears self-evident to you, that the consciousness of the world is definitely dependent on the world or is a function of it, as we may express it. Quantitatively, as the above examples show, this is beyond any doubt. Yet as contrasts we must not only keep in mind the extremes, like Shakespeare and the sailor, but principally the consciousness of the city resident, well educated and living in the complicated relations of civilization, and of the countryman, fisherman or hunter, growing up in solitude and education neglected. But also the qualitative difference of the consciousness of the world must also be astonishly great. Think of the contrast between a tropical resident, living in the midst of a luxurant flora and fauna, in a world of color, and the inhabitant of the polar region, who in a short Summer sees only the traces of vegetation.

It well pays to still tarry a moment with the noteworthy fact of association and keep its conditions in mind. The majority of associations, which could heretofore interest us, depend on the coincidence of the impressions. This of course does not imply an explanation, but the fact is undeniable, that the memorial images of coincident sense impressions are associated, whether its occurence is due to an inner connection or the merest accident. Only accidental occurrences are not so readily repeated, therefore their association does not become so firm as those conforming to law.

(1) According to Meynert. Sammlung von popular-wissenschaftl. Vortragen, 1895, p. 5.

The association of the different memorial images with each other is a second example of the appearance of the so-called beaten paths, i. e., the union between them therefore becomes so firm, because these paths have been so often used.

Besides association by coincidence, we know a second kind of association, that by sequence. I need only to refer to the fact, that in every attempt to learn a thing by heart, it plays the chief role. There are whole series of associations, which, early impressed upon us, remain in our possession for life; I refer to the alphabet, multiplication table, the Lord's Prayer, etc. This association by sequence alone gives us knowledge of things conforming to law. Whenever a definite sequence of phenomena recurs, we believe in a conformity to law, and very especially will we be strengthened in this belief, if we are able to voluntarily produce the first phenomenon, to then see the second phenomenon follow. That is the reason why experiment so irresistibly convinces us. But it is readily conceivable, that if an inner connection of the two phenomena is not thus disclosed, it will readily be proven by the presence of that association path, which has been used before in the same process. The necessity of causality, to speak briefly, is a congenital fault or merit of our brain. The phenomena of the world are far from possessing a connection with each other; the bond, that unites them, exists only in our brain and does not serve to unite the things themselves, but only the traces they leave in our brain.

We will see later, that a coincidence of sharp sense perceptions is impossible, owing to that attribute, which has been called narrowness or unity of consciousness. In reality only *one* sense perception occurs at a time, the second, apparently simultaneous, either follows or precedes it. Association by coincidence seems to be merely a case of ordinary association by sequence (1).

After having said so much of association, we cannot help seeing the difficulties which interfere with the comprehension of this process. On a former occasion (2) I compared it to the conduction of a wave through a system of

closed tubes. Meynert and Ziehen recently have made similar comparisons. At any rate the fact of association may be explained by the assumption of conducting paths between the anatomical localities where the memorial images of the several senses are localized. In the white matter of the brain mantle, as well as in the cortex itself, a multitude of fibres are demonstrable, which serve for the union of different cortical areas, so its anatomical basis is undoubtedly provided. When two cortical areas of one and the same central projection field are excited in the act of primary identification, or different projection fields simultaneously by means of the projection system conveying stimuli of the world in the act of secondary identification, the path of union extending between them is likewise put in vibration, the resistances, which oppose the conduction of the process of excitement become weaker and weaker, the oftener the process is repeated, and more the path is beaten, as I formerly termed it, facilitated, as it has been called of late. It is not implied by this, that this path must be continuous, we can only claim a physiological continuity for it, as for the paths of the projection system. On the contrary the fact very definitely indicates, that there is a special layer of ganglion cells of the cortex, that of the spindle cells, which by their form and position seem related to the association system, also that ganglion cells are interpolated in the association paths. In general it is contradictory to our view to assume nerve fibres, whose origin from a nerve cell cannot be proven. The simplest assumption then will be, that each spindle or association cell sends out two nerve fibre processes in opposite directions, which by their terminal branches are attached to the ganglion cells of the projection fields to be associated. There is no difficulty in fancying that the ganglion cells of a central projection field implicated in primary identification are all united by these association fibres provided with an association cell, although under these circumstances an immense number of association fibres are required, if computed from the number of perceiving ele-

(1) As to the further conditions of association see Ziehen.
(2) In my first work on aphasia.

ments to be combined. But as soon as the first physiological union, the memorial image, is disregarded, or only the next complicated case of visual ideas (see page 29), or the association between visual ideas and the memorial images of another projection field are kept in mind, the difficulty of fancying a definite material basis for the process increases immensely. Recently Goldscheider has correctly emphasized this circumstance. We will, however, consider the present possibilities. It seems wholly impossible to employ this scheme, which is conceivable within a projection field, namely that each perceiving element is anatomically united with every other by previously formed paths, for the union of memorial images with each other; as large as the number of fibres here at command may seem, it would be wholly insufficient in comparison to the almost infinite large number which must result from these combinations. Hence follows the absolute necessity of making another assumption, which simplifies the conditions of association. For the reasons above stated, but especially the last, I consider the idea justified, that the psychological unity of the memorial image corresponds to an anatomical unity. There could be *e. g.* cells of definite layers of the cortex, which received fibre processes from the above mentioned association cells, but also united with the perceiving or projection cells. There is nothing impossible in considering the processes of excitement of a definite cortical layer distributed to many elements, in a certain measure embracing the ganglion cells of the next cortical layer. Besides reflect, that for our consciousness it is the memorial images, not the perceptions, which remain associated, if the acquirement of association depends on the coincidence of the perceptions. Further reflect, how slowly and difficultly firm associations between different senses are acquired, but with what security they are retained, when once acquired. The opening of this road may be attended with very special difficulties.

(*To be Continued.*)

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ORIGINAL CONTRIBUTIONS.

OUTLINE OF PSYCHIATRY IN CLINICAL LECTURES.*

PSYCHO-PHYSIOLOGICAL INTRODUCTION.

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V.

THE BODY A PART OF THE WORLD. CONSCIOUSNESS OF THE BODY A FUNCTION OF THE CENTRAL PROJECTION FIELDS. ORGANIC SENSATION AND SENSORY CONTENT OF SENSATIONS. AFFECTIVE TONE OF THE SENSATIONS. THE LARGE VISCERA ARE REPRESENTED IN THE CONSCIOUSNESS OF THE BODY.

OF what significance the views now gained have for our subject, I can again best show you by a simple example. Assume that some one awakens from profound sleep or pathological unconsciousness. You can now perceive the sign, that his organ of consciousness again functionates in his recognition of the world and the deductive processes occurring normally. The consciousness of the

*Translated by Dr. W. Alfred McCorn, Resident Physician "River Crest," Astoria, L. I., New York City.

world was lost to the person asleep, or rather, it had not functionated so long as the unconsciousness lasted.* But after it has returned how does the person previously unconscious behave? We notice that he corrects an uncomfortable position he has assumed, that he feels of his body to be convinced of its condition, and that his interest is essentially directed to his own body. The *consciousness of the body* has returned, and now we must keep this process more closely in mind.

If the proof was given above, that only by means of the projection system sense impressions and hence reports from the world reach our brain, so the simplest consideration teaches that it is true of parts of our bodies. Only by the nerve paths, which unite a definite part of the body, for instance the arm with the brain, is the brain connected with it; if they are interrupted, as is often observed in mechanical injuries, so anything can happen to the part of the body, it can be pressed upon, pricked, pinched, bruised or burned without the least perception of it being conveyed to the brain and reaching the consciousness. Such occurrences are most often observed in the arm, owing to the brachial plexus being relatively superficial and so the most subject to the action of external violence.

As this example may be applied to all other regions of the body, hence it is true in general that the integrity of the nervous system is essential for perceptions of our body to occur. The unconscious person, whose brachial plexus is destroyed, can no longer identify the arm as his own on awaking. Consciousness of the body hence seems in general to be a function of the sum of the nerves of feeling, or in other words of the projection system. Meynert's remark, referring to the significance of a transverse section through the projection system at the level of the cerebral peduncles, also applies to the consciousness of the body; only the bodily perceptions from the retina and olfactory organ could occur if this operation could be performed.

*The contrast of functionating and latent consciousness will repeatedly oppose us, they correspond apparently to different states of one and the same anatomical basis. Therefore we have not the least reason to go further into it at present.

Fancy that in place of this section, which cannot be actually performed, another operation could be made, which is as little possible, but just as conceivable as the other. The calvarium is opened, the brain gently lifted from the base of the skull and, without sustaining incidental injuries, raised above the calvarium; blood vessels, nerves, medulla and spinal cord must have sustained no injury by this stretching process. Then the brain appears to us in its true form, as the real sentient and moving being, only equipped with a machine, which furnishes the apparatus for the reception of sensory stimuli, for the execution of movements, but in relation to the brain constitutes a part of the world, only that this is inseparably united to the brain. Sense impressions, then as before, would become conscious, only slightly retarded, movements would be possible just as formerly, only the transmission of the command would take more time. The brain then could be compared to a zoophyte, as Meynert has exemplified, which is provided with antennae, sense nerves, and with tentacles, the nerves of movement. That these antennae are equipped with a complicated sense apparatus, these tentaculae with a special motor apparatus, the muscles attached to a skeleton, does not prejudice the value of the comparison.

The consideration we had advanced with respect to the sense impressions, will apply entirely to our body. The consciousness of the body is first acquired, and like the consciousness of the world, in that reports from the most diverse parts of the body reach the brain in its central projection fields and their residues leave memorial images.

A part of these projection fields are known to us grossly, and localized in definite places of the cerebral cortex. There can be no doubt that each of the cortical areas experimentally determined by Munk, which he has named arm region, leg region, head region, ear region, trunk and neck regions, have the importance of central projection fields for these parts of the body. That these experiments are transferable to the human brain, human pathology furnishes incontestable proof, if the more exact boundary of the regions in man is still to be expected. In my opinion,

there can no longer be any doubt that each region represents the total sensibility and motility of the part of the body named, the arm region the central projection field for sensation and motion or, in other words, all the nerves of the arm.

Then a relation arises, which deserves our undivided attention. All these regions of the body are clothed with the tactile organ of the skin, its central projection fields hence contain the representation of sense surfaces. On the other hand the representation of the body in the "consciousness of the body" will not seem complete if the central projection fields of the special senses are disregarded, for the olfactory mucous membrane, the retina, the organ of hearing, the mucous membrane of the tongue and pharynx serving taste, although for special sense functions, always constitute the most important parts of our body. Therefore, we will have to place the consciousness of the body for these organs, if a special projection field is not demonstrable (as *e. g.* for the mucous membrane of smell and taste by certain branches of the fifth), in central projection fields already familiar to us, so that our cortex is quite well supplied with a consciousness of the world and consciousness of the body. We here meet with relations of a more complicated kind, which necessitate our return to the most elementary process of simple modal sensation.

What we had previously learned of sensation, and what furnishes the material for the construction of a consciousness of the world, we may term sensory content of the sensations. But it must be evident to you that every sensation posseses another quality, which we have until now intentionally neglected, and which is generally differentiated as the affective tone of the sensation from its sensory content. This affective tone of the sensation is especially closely related, as I hope to convince you, with the consciousness of the body, in that it is differently colored according to the place the stimulus acts and so in a measure furnishes a local sign for the consciousness as to which part of the body has been affected by the sense stimulus. The sensations, which are combined with an intense affec-

tive tone, show a close relation to the mechanisms of movement, which properly co-operate and apparently serve for the protection of the body. We do not usually take heed of these *organic sensations*, they escape us, as our attention is occupied with the sensory content of the sensation. Still somewhat stronger stimuli act on our consciousness, so that we neglect the sensory content and turn our attention to the organic sensation of the part of the body concerned. But usually appropriate movements of defense occur previously. A few examples will show this. Fancy that you are unexpectedly touched on the arm, perhaps in a crowd, you immediately think of a person or object from which the contact has come, according to its kind. If you are struck violently, so that it causes pain, you draw back the arm and try to protect yourself from further injury. Your attention is then turned to the part injured. It is much the same with loud noises. Everyone jumps back when a shot is fired unexpectedly close to the ear, and no one is able to stand in close proximity to a passing express train, even if he knows there is no danger. Here it is essentially the din which produces the intense organic sensation and causes the involuntary recoil. A simpler form of movement of defense, closure of the eye, we observe from the action of bright light, particularly when it occurs suddenly in the dark, and under these conditions it is painful. On organic sensation also depends the first adjustment of the eye to the point of illumination by a mechanism of movement, which I have already mentioned in speaking of the visual ideas. All these examples of movement cited, first of a simple, then of a more complex sort, we will have to consider in Meynert's sense as movements of defense and offense, and remember that their original source is to be sought in suitable congenital reflexes. I will mention Pflüger's celebrated experiment in which the decapitated frog is not only capable of movements of defense, but even of appropriately modifying them, as in wiping off the acid applied to the skin, it uses the opposite leg as soon as the one on the side irritated is cut off. These modifications may be the acquirement of the individual, they always

occur through the gray matter, to which we essentially ascribe a reflex action, and there can be no doubt that certain congenital reflexes are appropriate in the person and serve for defense, to say nothing of the lower animals with predominant spinal organization. The lowest organized vertebrate shows within this organization more than simple reflex movements, in that it, like the decapitated frog, possesses the ability of certain appropriate adjustments. But where a powerful cerebrum exists, as in mammals and especially in man, we see similar mechanisms of movement transferred to the central projection fields of the cortex (as it has been shown experimentally *e. g.* by Munk in the movements of the eye). The appropriate modification of the movement is to be observed in both cases according to the place on the body affected. It shows us that the chief purpose of the organic sensations is to protect the body.

The local signs of the retina referred to above in speaking of the visual ideas, may now appear to you in a new light. They apparently spring from the organic sensations of the retina; for we saw that the sentient retinal elements act on the motor mechanism of the cortex according to their position, that the fovae centralis is always turned to the stimulus, and therein a movement of defense or offense in Meynert's sense must be perceived. In fact, it must prove equally useful in the animal kingdom for defense as for attack. If it has been made use of above to explain the origin of visual ideas, so we have really anticipated; the acquirement of a spatial image of the retina must precede this act in our consciousness of the body. By the fact that the perceiving cells of the optical projection field related to the retinal points are allied by association in different points of the motor-oculi projection field according to the retinal meridian, different grades of intensity of their excitement according to the distance from the centre of the retina, a firm orientation as to the position of the retinal points and thus a spatial image of the retina is gained. The process is the same as in the acquirement of optical memorial images; by coincidence or sequence of the excitement of adjacent retinal points arises the firm association

between the corresponding perceiving cells on the one hand, by the movements of adjustment of the eye between the latter and the points of the motor projection field on the other. By the constant recurrence of like relations under the same conditions, the associations gain the requisite stability, even increased to insolubility. Evidently the consciousness must first be oriented as to the retina ere projected images can be spatially estimated.

As this consideration leads to the the spatial sense of the retina, in that the retina is considered as being a part of the surface of the body, while the optical apparatus of the eye combined with it only furnishes the equipment, so the like consideration applies to the tactile organ of the skin. In the skin a spatial sense can also be developed, in that the consciousness is informed as to the sequence and position of the sentient points of the skin. And this information can only be gained by the exercise of associations between perceiving elements or perception cells, which correspond to the points of the skin, and mechanisms of movement in the motor projection fields of the trunk, eyes and limbs. But we will have to regard the latter as much more complicated than the combinations of movements of the eye muscles. Think how relatively simple are the movements of the eye-ball, contained in a given space, freely movable about a centre of rotation, in comparison to those of the more versatile tactile organ of the hand. If we only consider the simplest tactile movements, like flexion and extension of the fingers, we know from Duchenne, that they cannot occur without counter movements of the wrist joint, which evidently serve for its fixation against the forearm. The forearm must be fixed against the arm, and this against the shoulder, but the latter fixation presumes a corresponding innervation of the trunk muscles, without which the trunk would lose its equilibrium in using the hand. It is then a matter of acquiring definitely fixed relations between a large number of separate mechanisms of movement ere the hand can be used as a sense organ. This task seems so difficult that we might doubt the possibility of its accomplishment, if its appearance did not convince us to the contrary.

Gentlemen, I cannot help seeing that in my statement the thought has occurred to you, it would be a more or less voluntary construction and will not stand the test of facts. Permit me to briefly mention the data which, as I believe, necessitate the assertion submitted with convincing force. One fact is that in cortical diseases, be they of the occipital lobes, be they of the parietal lobes, continual defects are observed and in the first cases of the visual field, in the second of the cutaneous sensibility of the limbs. The occurrence of such defects incontestibly prove, in my opinion, that adjacent points in the retina must possess a projection in adjacent cortical elements of the occipital lobe, adjacent parts in the skin of the limbs those in adjacent cortical elements of the parietal lobes. The occurrence of circumscribed and hence continuous defects of this sort would otherwise be absolutely inexplainable. It is the next and most probable assumption that this projection refers to the nearest termination of projection fibres, the projection cells serving for perception.

The second fact consists in the more certain orientation we possess in regard to the retina and the whole cutaneous surface. For the retina I need not now go into this. But the skin of the body is known to us at every point of the body with certainty, corresponding to the delicacy of the spatial sense. So it is that any person with closed eyes can immediately indicate the spot on the skin that has been touched. He cannot only name or indicate it with the finger, but he can also correctly turn his eyes to this spot. At the places with specially delicate spatial sense, *e. g.* the palm of the hand, he can reconstruct from the sequence of cutaneous points touched the form of a letter, a number, even arabesques, which have been outlined. Similar experiments succeed in the majority of persons at a number of other places on the skin.

Gentlemen! If you have followed me thus far, you have acquired the most essential material for the construction of a consciousness of the body, but it is still imperfect and needs completion. The representation of three of the most important sense surfaces is still wanting, those which

serve for hearing, taste and smell. There is no difficulty in transferring the points of view gained to these senses. You will at least admit this of hearing, because here the sensory content of the sensation—think of the speech sounds—acquires an importance controlling the whole mental life. But yet we have seen in an example above, that under certain circumstances the organic sensation shows itself very forcibly in this sense and produces the complicated defense movement of recoil. Not only the intensity, but also the quality of the sense impression can cause similar effects; there are certain sounds which produce the feeling and movement of horror, and that tones are pleasant or unpleasant is a daily experience. Besides it is well known that a certain spatial sense is peculiar to the organ of hearing, in that the place is determined from whence the sensation of sound has come. It is shown to be more finely developed in pathological cases, but still presents certain local signs which give the locality of the stimulus, are also present in the acoustic sense surfaces, excepting the arrangement of Corti's organ, which serves for the orientation of tonal quality. In taste and smell organic sensation and sensory content of the sensation are so closely united that they are only artificially separable. As you know they are both exquisite chemico-analytic senses, whose importance for the nutrition and protection of the organism is apparent.

To the organic sensations belong the sensations coming from the muscles, joints and large viscera. These latter show very eclat that the organic sensations have an independent significance and may occur without modal sensation. These organic sensations are only slightly conscious in health, although feelings of hunger and satiation, desire to urinate and defecate, sexual desires, etc., are known to everyone. Whereas diseases of the viscera prove that they are endowed with active sensibility and essentially contribute to our feeling of well-being or discomfort. In fact it is this element which has always been differentiated as the "affective tone" of the sensations, *i. e.*, their attribute of being accompanied by agreeable or disagreeable feelings, in

the organic sensations from the viscera predominating over all the others, even those which refer to the location of the sensations.

The location of these visceral feelings is always vague, if definitely pronounced; think of the pains in the stomach, hepatic and renal colic, the discomfort of a distended bladder, etc. But the normal functioning or the disordered functioning of these organs hence contribute largely to the general sensation, or in other words, the consciousness of the body is plainly dependent on the state of the large viscera. We will have to define in general the affective tone of the sensations as an affection of the consciousness of the body. It is therefore to be presumed that the consciousness of the body contains special projection fields for the large viscera, a presumption, which is essentially supported by certain hypochondriacal symptoms, which occur in the insane. In regard to the location of these projection fields we are wholly uninformed, if Meynert's hypothesis is rejected, which places them in the ganglia of the corpora striata. As seductive as this may seem from general considerations of an anatomical and morphological sort, it is at present wholly undecided and permits no practical applications.

The sum of the memorial images of all organic sensations forms the content of the consciousness of the body, just as the memorial images of the modal sensations constitute the consciousness of the world. We may now undertake a psychological definition according to the points of view gained and state, that the first refer to the location of the stimulus, the latter to the form of the stimulus or the mutual arrangement of the stimulated elements.

It is now possible to briefly state what constitutes the essential difference between a sense perception itself and its memorial image. The sense perception is always accompanied by organic sensations and therefore definitely projected into space, whereas the memorial image is not. Probably it is the retinal points, skin points and directly associated "perception cells," which produce the organic sensations.

That all projection fields, which comprise the conscious-

ness of the body, must be regarded as the most intimately united with each other by association paths, I have already intimated. As the reports, which the body sends to the consciousness, are always identical under like conditions, so among the memorial images the organic sensations are more firmly united than can ever be thought of the memorial images of the world. The different parts of the body in their relations to each other are absolutely unchangeable, whereas the things of the world are proportionately changeable. We can more or less exclude the things of the world, whereas the sensations, which our body furnishes, accompany us continually. During sleep the effects of the world as good as leave no trace in us, whereas the surface of the body, on which we lie, continues to send its signals to the consciousness. Whatever position we may take while awake, we are unable to get rid of the constant effect of pressure and its perception on some part of the cutaneous surface.

That a certain consciousness of the body constantly accompanies a person when awake, is incontestibly shown by his conduct. May the attention be ever so much taken with an object of the world, may one be ever so deeply absorbed in a view, in listening to a melody, the body still maintains its erect posture, continues to walk, avoids obstacles, adapts itself to the irregularities in the pavement, makes movements of defense of different kinds, etc.

It is now comprehensible to us, that from each organic sensation the whole complex of memorial images of the bodily organs is called into consciousness, so that, if we hold to the analogy with the concepts of the consciousness of the world, here only a single large concept so to speak, that of the body, is constituted. At least those movements of defense, which we became acquainted with in intense organic sensation, indicate that almost all the muscles of the body can participate in it. For the formation of concepts of definite regions of the body, with as clear a boundary as in concepts of the world, do not seem to occur or imperfectly in the consciousness of the body. As a sense perception is impossible without the related organic sensa-

tion, so the consciousness of the body is awakened *in toto* by each sense perception. Hence the consciousness of the body rises with every sense perception.

Organic sensations have a double origin; besides the stimuli of the world there are internal stimuli, which produce them. Consider the skin's feeling of warmth or cold in consequence of vasomotor processes, perverse sensations of taste in catarrh of the mucous membrane of the mouth, subjective noises in the so-called ringing in the ears, the flashes of light, which arise from the retina in absolute darkness, etc. All these organic sensations are not referred to the world. The opposite relation, which here exists, is then that sense perceptions are not thinkable without corresponding organic sensations, but that the latter may occur without the stimulus being referred to the world. *The perception is preceded by organic sensation*, the organic sensation not by the sense perception. So this idea is suggested from the state of the central projection fields, which I have already intimated, namely that the consciousness of the body is represented by the perception cells and indicates the first station in the cortex, which must be passed ere the sense stimulus reaches the consciousness of the world. The layer-like superposition of the ganglion cells of the cortex favors such an assumption, in which those of the medullary borders of the next layer (respectively adjacent layers) would represent the consciousness of the body.

There are certain times when the body of the adult undergoes marked changes, like that of maturity or puberty, the climacteric, pregnancy, the puerperal state and senile involution. According to our theory it cannot now seem strange that they afford a specially favorable foundation for the development of certain diseases of the consciousness.

The relative stability of the consciousness of the body is explained, in that it seems as a sort of constant magnitude in contrast to the other contents of consciousness, as a unity in comparison to the impressions of the world subject to change. Besides the consciousness is taught by experience, that the body is inseparable, whereas the world is to be more or less divided into its components. So a

"primary I" (Meynert) is formed, by which must be understood the consciousness of the body.

VI.

CONCEPT OF SPONTANEOUS MOVEMENT. DIFFERENTIATION FROM THE REFLEX. SENSATION AND IDEA OF POSITION, FEELINGS OF INNERVATION AND THEIR MEMORIAL IMAGES, SENSATION AND IDEA OF MOVEMENT ARISE FROM ORGANIC SENSATIONS. THE TACTILE SENSATIONS AND IDEAS OF THE TACTILE ORGAN OF THE HAND ARE DERIVED FROM ORGANIC SENSATIONS.

Perhaps it has surprised you, that I have completely ignored a group of phenomena, which is most intimately related to the consciousness of the body, namely: all the phenomena of the motor apparatus. I have avoided this inquiry until now, because it is especially complicated. How is it conceivable that the mollusk, we have mentioned, learns to control the movements of its muscular apparatus so perfectly, as is actually the case, if we will set aside congenital aptitude? We will now investigate this point more fully.

It is well known that man, like every vertebrate, presents the plainest evidences of his phylogenetic descent from invertebrates, in that the spinal cord has retained the organization according to the number of vertebrae. We must admit this metameric organization in each apparatus of movement, with which the brain is equipped. It thus indicates that primarily the reflex mechanism of the spinal cord is mutually related to the sensory and motor apparatus of like segments. So it is, that a slight prick to the palmer surface of the toes produces, as a reflex, their dorsal flexion. By the irradiation of the reflex demonstrated by Pflüger it is certainly shown, that this metamereism does not exclusively fix the structure of the spinal cord, but that combinations of larger muscle areas, indeed according to the intensity of the stimulus almost all the muscles, must be prefigured in the gray matter of the spinal cord. All these reflexes have nothing to do with consciousness,

in fact are congenital and occur later, when consciousness is precluded, as in profound sleep and unconsciousness. Still when awake consciousness subsequently takes note of them. The mollusk gets reports of the reflex movements depending on a congenital attribute of the body. We may call these reports sensations of movement, without forestalling the qualifications, and their residual memorial images, ideas of movement or motor memorial images. We now see what we have to understand more strictly by sensations of movement.

In a reflex movement a series of the most diverse sensations must arise. Chiefly those of the joint, which we may indicate by *g*. This joint sensation, due to a definite excursion of movement, is combined with very definite cutaneous sensations *h*, for on the flexor surface of the joint the skin is shortened and approximated, while on the extensor stretched and separated. Therefore *g* has a very constant relation to *h* which occurs when the same position is passively imparted to the joint. But the muscles are also implicated, for in flexion they are contracted on the flexor side of the joint, lengthened and stretched on the extensor, while the opposite occurs in extension. It may be proven by pathological observations that these muscle sensations, *m*, have an independent meaning, for they are occasionally retained when the cutaneous and joint sensations are absent. The very definite relations of these three sensations to each other: *g*:*h*:*m*, we term the sense of position *l*, so that *l*=*g*:*h*:*m*.

We will call its memorial images ideas of position *L*. The same ideas of position must arise, when the joint is moved passively, so they by no means belong exclusively to the reflex act.

A person's ideas of position may be studied by passively putting his joints in various positions. The normal person is either able to imitate these positions or to precisely state each change, at least he shows he has a perfectly correct idea of the position of his limbs. This experiment is especially important in the freely movable joints of the fingers and toes. A prerequisite for success is

the complete elimination of the individual's own activity, or the elimination of his volitional impulse, which is not equally attainable in all individuals, for it presumes a certain control over the movements.

Formerly the muscle sensations were wrongfully regarded as the chief factor in the sense of position and therefore the possession of ideas of position were considered a special sense, the "muscle sense." We will avoid using this term, for it may lead to further misconceptions.

But if we now assume, the sense of position *l* is produced by a reflex movement, the sensation of movement *b* arises; to those already mentioned a further characteristic must now be added, which can be nothing else than a sensation of cell action ζ, and is to be regarded as the cause of the muscle innervation at the moment of the reflex. By the muscle contractions, which then occur, certain muscle sensations *ml* are produced, and have a definitely constant relation to the process in the ganglion cells ζ, then $ml:\zeta$. If we term the report, which comes to the consciousness from the motor impulse, the sense of innervation *i*, so $i=\zeta:ml$. On the whole the sensation of movement *b* contains both components of the reflex movement, the sense of innervation as well as the sense of position, and these have, as is readily conceivable, a definitely fixed relation, then $b=i:l$.

The muscle sensation *ml* is capable of direct demonstration by faradization of the muscle. Yet at most it will then be possible to determine what current strength is perceived and whether changes in it are recognized. The resulting movement of the joint causes an independent sense of position, which is perceived like any other arising in the consciousness normally. A regular connection between the muscle sense and the sense of position does not exist in this experiment, because an isolated contraction of a muscle never occurs normally, so the conditions of the experiment offer a novelty to the consciousness.

The sensations of movement, which reach the consciousness in this way and must evolve the ideas of movement *B*, by the contents constantly recurring in the same manner

in fixed components of the consciousness, give only memorial images of reflex movements, but still very definitely appropriate muscle arrangements are there represented, for reflex movements are without doubt co-ordinated as Duchenne thinks. According to Duchenne's classification into impulsive, collateral and antagonistic muscle co-ordinations, the reflex movements come under the impulsive and collateral. The reflex movements are not without a certain adaptation, yet they are apparently to be regarded more as protective measures, which are to serve as a defense against irritation or to remove the part of the body from its range. These two factors are to be regarded as the most essential preliminary conditions for the accomplishment of spontaneous movements. Bear in mind, that during the reflex movement the consciousness is not only aware of the movements as such, but also of the sensation *e*, which is the stimulus exciting the reflex. Its memorial image *E*, be it tactile, be it directly painful irritation, will consequently be associated with the idea of movement *B*. We can then only speak of spontaneous movements, when the memorial image E produces in the association path *EB* the idea of movement *B*, that the movement actually happens. Likewise as a preliminary condition the assumption is essential, that a centrifugal path *p* extends from *B* to those ganglion cells which have previously participated in the reflex process. This path is in fact proven to be the pyramidal tract. Two examples will better illustrate the essential difference between reflex and spontaneous movements. A pin prick to the sole of the foot results, as a reflex movement, in a flexion of the lower extremity in all its three joints, and thus the foot is removed from the irritation. In the spontaneous movement the pin is merely seen, the memorial image *E* of the tactile sensation *e* becomes conscious and through the association path *EB* effects the movement, which had previously been reflex. The necessary path *Bz* is the pyramidal tract. The closure of the eye on the approach of a foreign body is very similar in its nature; then an optical perception occurs first, which is associated with the memorial image *E*, as the latter with the idea of movement *B*. In a general way we

may define spontaneous movements to be reactions to memorial images of external stimuli. The majority of spontaneous movements during life might really start from some external stimuli, if the possibility cannot be controverted, that present external stimuli may be wholly wanting, so that spontaneous memorial images form the starting-point of the association process, which finally ends in the movement.

The child's first spontaneous movements are apparently controlled by organic sensations. The movement of sucking, which is reflex in the new-born, subsequently becomes a spontaneous movement due to the organic feeling of hunger. Later the sight of the nipple suffices to produce the movement of sucking. The sensitiveness of the child's eye to bright light refers to the predominant organic feeling as the cause of closing the lids. Of the spontaneous movements those of *defense* are by far the most prevalent in the early months, *i.e.*, those depending on organic sensations and are a more or less faithful imitation of the reflex movement. Also very complicated combinations of movement clinging to the adult through life, like those of shrinking, recoil, springing aside, etc., are under the control of organic sensations, as shown by previous examples, and if heredity is admitted to have a certain influence in the development of language, which can hardly be denied, then the impulse to imitate sounds heard have to be referred to organic sensations in the acustic. In other words, it will have to be assumed that the excitations of the acustic at a certain period of life are attended with a pleasant feeling, and that the child's experience in being able to utter these sounds is utilized to produce these pleasant sensations by its own speech movements. Organic feelings in the optical domain are demonstrated in the adult, when the pleasant sensation, similar to sensual gratification, is considered in the play of colors, where those of different saturation follow each other in rapid succession. That in the province of the acustic the pleasure afforded us by a piece of music originally depends on the same condition, can scarcely be doubted.

The simplest scheme of a spontaneous movement, which

was given above, may be presently applied to the actively acquired tactile ideas. As in the reflex the movement follows the stimulus, as in the movement of defense the optical perception of the approaching object causes the lids to close through the association path, so doubtless the optical perception of an object is often the starting-point for the execution of tactile movements—*movements of offense* according to Meynert. If the whole surface of our skin functionates as a passive tactile organ, *i.e.*, imparts certain vague tactile perceptions, which occur without any movement of the body, we are still in possession of specific movable tactile organs, real antenna, so to speak: the extremities and in early life the mouth. The child feels of every object it sees with its hands and mouth. The previous statement as the retina, that the memorial image is the residence of a definite spatial arrangement of the excited retinal elements, must naturally apply to the passive tactile organ. In the retina there is to be sure a place of keenest vision, which we then claimed to be the place serving exclusively for the acquirement of memorial images. In the passive tactile organ of the skin there are also areas of keenest sensation, to which belong the mouth of the suckling, as well as the skin of the hands and fingers; but still the assumption might be advanced, that no single limited cutaneous area alone gives origin to memorial images, but that they may be acquired from every part of the skin. Within certain limits this is also true of the retina of course, for objects perceived eccentrically are correctly recognized under certain conditions, and for the retina it may be postulated, that the memorial images thus acquired are gradually associated with those of central vision. A similar association between the memorial images of the different cutaneous surfaces will have to be presumed in the central projection surfaces of the passive tactile organ, whenever they are derived from the same object. But still it cannot be denied that finer tactile ideas are largely acquired by the movable tactile organs: the hands and fingers. The way this occurs will now be more closely investigated.

Should a concrete thing, *e. g.*, a penknife, be felt of,

and we assume this is done with one hand only, the volar surfaces of the fingers are passed over it, being frequently removed, and so convince ourselves of its consistency, smoothness or roughness, temperature of the surfaces and the general form and size of the object. We must regard the sum of these sensations to be a unit, which only recurs when a penknife is again felt of, but from no other concrete object. If we call this unit the tactile sensation of an object *t*, it is composed of a series of cutaneous sensations *e1+e2+e3...* and a series of sensations of motion *b1+b2+b3...*, which have a simple and complicated relation with the first. Simple, in that any greater muscular contraction intensifies the sensation of pressure, which is produced by the object, complicated in that a series of successive movements is required to ascertain the form of the object under conditions of equal pressure. How complicated the quantity $t=e+b$ must appear to us, arises from the fact that each member of the series *b1+b2* is already a compound quantity, as I have just shown. If we bear in mind that $b=i:l$, *i.e.*, indicates a definite relation of sense of position and feeling of innervation, so now the association with the passive tactile sensations of the series *e1+e2...* is added. This complicated quantity we may term the tactile sensation *t* of an object. We name its memorial image *T* tactile idea or tactile image. In fact we test the presence of tactile ideas by undertaking to recognize concrete objects by merely touching them with the hand, the eyes being closed. The normal person is able to do this readily with any object familiar to him.

By going further into our subject it ought to be clear to you what an important role the movements of the body play in sense perceptions. The memoral images of the tactile sense, which in the beginning of our researches we traced to a sort of passive projection process, like the other sense perceptions, now seem composed of memorial images of spontaneous movements. But as these motor memorial images will have to be added to the consciousness of the body, we then enter a province, where consciousness of the world and the body lose their principal

contrast and the proposition that changes of the body alone inform us of the things of the world, is again most evidently verified. All the spontaneous movements, which serve to master the world (offensive movement, Meynert), show the same connection between the world and body. Every accomplishment or art within the scope of movement must be tediously learned, from those of walking and speaking to the most complicated of the creative artist. All these movements take place under constant direction of the tactile feeling, they are first possible by the fixed possession of a large series of the most complicated tactile ideas. When we undertake to test the ideas of movement, we generally content ourselves with the simplest evidence of manual dexterity. The patient, with eyes closed, is asked *e. g.*, to unbutton and button his coat, to sharpen a lead pencil, to take out his watch, to outline figures in the air, or to write in the usual way. With few exceptions the manipulation of one or more objects is always requisite, therefore the possession of tactile ideas is indispensable for the performance of the required movements.

As in the tactile ideas just discussed the movements are united with cutaneous sensations, so there is a specially complicated muscular apparatus, whose movements are under the direction of retinal impressions. When the form of an object is to be accurately perceived, by suitable movements of the eyes, the place of keenest vision, so to speak, is passed over the outlines of the object, a process which is perfectly analogous to feeling it by the movable tactile organ of the finger, and could well be called feeling the contours by the *macula lutae*. The complicated eye movements, which are requisite, leave motor memorial images and form very similar series of associations as to those acquired in feeling with the hand. As these blended with the passively acquired memorial images from cutaneous sensations *E* represent the complete tactile idea of an object, so the motor memorial images of these eye movements are a new component, which, associated with those already known constitute that which may with propriety be termed the visual idea. Unfortunately it is impossible

to separately investigate the sensations and ideas of position of the eye movements. Nevertheless their importance with respect to orientation in space cannot readily be overestimated, for they are another eclat example of how organic sensations are utilized to gain in consciousness a fixed image of the world. In conclusion I must call your attention to a very similar relation between speech movements and perceptions of hearing; the child's speech movements are chiefly feeling movements but which are not related to the cutaneous or retinal sensations, but to those of hearing, *i. e.* are directed by them.

In so far as we may survey the content of consciousness, it shows itself accessible of a certain localization by the fact of projection. As the optical memorial images are localized in the central projection field of the optic nerve, the acustic in the central projection field of the acustic, we cannot doubt that tactile ideas from concrete objects are similarly localized. Simple figures, like numbers, a cross, a circle, a triangle, placed on the skin, are recognized by feeling, when the eyes are closed. The central projection of the passive cutaneous tactile organ then develops a spatial sense, like the retina, in which the mutual arrangement of the cutaneous surfaces affected by the stimulus is decisive for the memorial images thus arising.

As above stated, these cutaneous memorial images become tactile ideas by their association with the ideas of movement of the tactile organs.

Hence the same tactile images reach different projection fields, and are not only united with each other by fixed association, but particularly with corresponding visual ideas. The tactile ideas of concrete things should be exclusively localized in the arm regions, and of course for the right and left arm in different hemispheres, because these tactile ideas in the adult at least are wholly acquired from movements of the hand.

It is comprehensible, that we are not congenitally orientated as to the position of retinal points, but must acquire it. Orientation as to up and down, right and left, relates exclusively to the body and simply indicates the

acquirement of fixed associations between the perception cells, which are co-ordinated to the points of the retina, and the "concept" (see above) of the body. Therefore sensations of movement of two kinds are to be considered; just those derived from movement of vision upward, downward, right and left. They may be called general eye movements. Second, those serving to focus the eye ball to the light stimulus or to close it, may be distinguished as movements of adjustment. That eye movements are reflex at some period of the individual's life is an absolute physiological postulate. Most probably there are movements of adjustments of adjustment, which may be produced by means of suitably formed combinations of the primary optical centres with the nuclei of the eye muscles by the light stimulus. The feelings of the innervation ($i=\zeta:ml$, see above) originating in this way, presume a specially fine sensibility of the eye muscles, in case special sensations of position of the eye ball (ciliary nerves?) will not be admitted. Their memorial images are the ideas of movement in the province of the eye muscles and are associated in accordance with their mode of acquirement with the perceiving elements in the projection field of the retina, that from some of these a definite form and a definite degree (range of excursion) of associated muscular combinations can be produced.

The points of stimulation found by Munk in the dog's occipital lobes, by which movements of adjustment could be effected, apparently correspond to these. In the dog they locally coincide with the cortical projection of the rectina, and the centrifugal fibres $B\zeta$ (see above) arising from them, run in common with the projection fibres in the sagittal medullary fasciculus of the occipital lobe. In so far they take an exceptional position and are distinguished from the fibres of the pyramidal tract.

VII.

CONSCIOUSNESS OF PERSONALITY OR INDIVIDUALITY. IS ITS LOCALIZATION POSSIBLE? THE ENIGMA OF SELF-CONSCIOUSNESS.

The cursory glance I have given you of the two great

provinces of consciousness of the world and body, far from exhausts the content of consciousness, for they are but the first foundations of a consciousness, we have in common with animals, if quantitatively different. Man's higher mental development must surely start from these foundations, but far surpasses them, and begins, so to speak, at the time these foundations are required. The results of the normal mental development is the formation of a personality or individuality. The unconscious person, whom we have chosen as an example, must regain consciousness of his personality, ere we can regard him as entirely himself, *i.e.*, he must remember, not only that he has the same body as before the accident, but that his mental possessions are the same. *The consciousness of the personality*, which we must now investigate somewhat minutely, presumes the possibility of an ego development. Its chief condition is, as we have seen, the unchangeable body in contrast to the changeable world. The force of this fact is evident the moment the child begins to use the word I. If the mental development is arrested before this period, an idiot occurs, who speaks of himself in the third person. The consciousness of the personality embraces all that is generally understood by mental possession and mental attainment, all the child must be taught by education, development and training, therefore the individual may be formed by it.

Primarily decisive for a person's future is doubtless the social medium, in which he grows up. A living example is always the most effectual means of education, and must be the more so, when combined with self-evident authority, which is innate in the parents toward the child. The parents' family life undoubtedly imprints the decisive stamp on the child, as to its mental personality, its future character. The consciousness of the personality therefore embraces all those attributes, which follow with instinctive legitimacy from the social medium, in which the individual has grown up and lives. They are especially the so-called attributes of character, which are very definitely developed by the force of this medium, consequently a brutal or refined affective condition accordingly as an egotistic or altruistic

bias for future actions predominates. These attributes may be developed to a marked degree, if the most powerful and likewise half instinctive means of the person's education, phonetic speech, does not cooperate, as the example of the deaf mute teaches.

The possession of language must be associated to the consciousness of the personality in a certain sense, in so far as it reflects the peculiarities of the medium, in which the person has lived. The variation of language in different peoples assigns a special position to this part of the mental possessions, different from that which the universally approximative like consciousness of the world and the body occupies. Within one and the same race there are variations in dialect, which often cling to a person his whole life and betray the medium in which he has lived. The person's manner of speech, which differs so much according to his education and degree of mental development, belongs to the consciousness of the personality as a partial phenomenon. By language the whole mental status of the adult, and not only of that, but of countless generations, whose mental inheritance we have received in language, is transmitted in definitely logical arrangement and organization to the child's brain, somewhat comparable to the action of an uncompleted instrument. Systematic, logical thought, all finer mental operations doubtless have their main root in the perfectly transmitted art of language. Therefore the kind of language which has come to the individual from his parents, is decisive as to his whole mode of thinking, whether crude and inadequate, as from persons of low rank, or from refined and highly educated parents. The altered mode of speaking in the insane indicates a change in the mental personality. If we leave out of consideration the educational medium of language, so all that the person learns by instruction and tradition, the sum of knowledge, which he appropriates, becomes a component of his personality. When we speak of a person's memory, we usually understand the sum of his acquired knowledge, at least we generally test the memory by asking about this information, and judge of the ability to remember according to the

average established by the majority of normal individuals. The sum of this information or knowledge is not only quantitatively, but also qualitatively manifested differently, according to the individual's course of development. I need not go further with you into the quantitative difference. It is therefore qualitatively so great, because the knowledge of the lower grades of education consists in most part of serial associations, which dispense with inner connection; historical dates, sayings and songs learned by heart, the Ten Commandments, even the multiplication table are remembered. So long as new facts are acquired, a sort of summation of this possession occurs in knowledge, but which is not wholly equally equivalent, in so far as the child's brain is characterized by the ability to retain what is learned, the early acquired knowledge is often refreshed and so must become fixed in the memory by its use. Reading and writing usually belong to the information acquired at this time, which are well fixed, but still based on acquired association of forms of letters with phonetic speech, an association, which is often strangely broken through by focal brain diseases.

To the consciousness of the personality also belongs the sum of experiences peculiar to the individual. The individual, whom we have before us, always represents their sum total, be it information, be it experience, a sum, which has a positive value only at a certain instant of time, but which gains new accretions every hour, every day. The present state of the brain in a certain measure is the derivative of all prior states. Consequently the requirement, which must be made of an individual after a mental disease, that he recognize the morbidness of his prior state; for the sum must necessarily be false, if false components are contained in it.

The range of a person's interests, be they merely egotistic, or in others, family, etc., or fixed on the occupation, the daily work, also belong to the consciousness of the personality. The interest in family, friends, chiefly to the depreciation of self, often takes a dominating position in the individual's content of consciousness, think of the intimate

relations between mother and child, between man and woman in sexual love, etc. The readiness to die for others, as well as on the one hand to die for an idea, a principle, a set purpose, on the other the predominant general egotism of the majority, shows the extreme opposites and the infinitely large variety of mental personalities, all of which are within the normal. Further variations are induced by disease. All this explains the difficulty of establishing a psychical status, be it in the normal person, be it in one mentally diseased, it therefore also explains the slow advancement of clinical psychiatry.

The consciousness of the personality has a certain, readily evident dependence on the consciousness of the body and the world. The person with keen senses and robust health must develop differently in his mental personality, than one with blunt senses and feeble body. The character attributes of courage or cowardice, frankness or secrecy, to act vigorously or timidly, may often be traced to such foundations in the consciousness of the body and the world. The possibility of adaptation to surroundings, which Herbert Spencer calls the sign of the normal mental state, varies according to these preliminary conditions. The mutual relation may be expressed in the proposition: The consciousness of the personality is a function of the consciousness of the world and the body. But if the impressions derived from the social medium are included in the consciousness of the world, which is proper, this proposition is very obvious. It is then evident that under good conditions such personalities will develop, whereas in criminal families anti-social personalities occur, and a morbid mental state alone does not suffice to explain the criminal nature, but rather such can only be spoken of, when the mental personality has developed contrary to the surrounding medium, as in cases of so-called moral insanity. At any rate the consciousness of the personality in comparison to the consciousness of the world and the body is by far the most complicated, because depending on such association

processes, to which previously a certain individual variation was inherent.

The position the individual believes he occupies in human society according to his own estimation, depends on the consciousness of the personality. If it is morbid, we find the striking symptoms of grandiose delirium, micromania, delusions of persecution, personal importance, hypochondria, etc. We will later go into these morbid phenomena more fully.

What spatial idea can we gain of the consciousness of the personality? Or have we reached the limits of spatial conception and now face the incomprehensible?

Evidently the consciousness of the body is usually capable of localization, because it is most closely united to the standard of the projection system. The consciousness of the world at least permits division according to the projection fields in which its components, the sensory memorial images, must be regarded as stored. In the consciousness of the personality a localization according to the standard of the projection system is now out of the question. Therefore is it entirely beyond the range of the principle of localization?

That this is not the case, clinical experience teaches, for certain mental diseases exclusively affect the consciousness of the personality, others almost entirely the consciousness of the world or body, finally again certain other diseases of the personality are combined with those of the body or the world. The disease process therefore seems distributed to different localities. The progressive and pernicious mental disease, progressive paresis, successively affects the consciousness of the personality, the world and the body and seems to begin quite regularly in an atrophy of the fibres of the outermost gray cortical layers. Further clinical experiences exist and indicate an extensive localization within the consciousness of the personality. In consequence of severe diseases, also of brain diseases, very large portions of the consciousness of the personality are extinguished. Fancy, that all those ideas acquired very recently —during a period, which may embrace a few months or

years, as well as half a life time, are lost. Cases of this kind have been reported, *e.g.*, from my clinic by Dr. Freund, under the caption of general weakness of memory.* These persons have quite an accurate memory—sometimes as accurate as could be expected of them normally—of all events prior to a definite period, *e.g.*, the 30th year, while all those subsequent have disappeared from their memory, often their most important experiences, such as marriage, birth of children, loss of property, etc.; also well-known public events, accomplishments acquired during the time, etc. The loss embraces, in a word, all those links in a chain of ideas, which have been added to the consciousness of the personality from a certain period. Consequently such a person, if an old woman, still considers herself a young girl and so acts in comical contrast to the reality. To a less degree the same memory defect is almost physiological in very old people, when early memories may be faithfully retained, while the daily occurrences of the past few days, weeks, months are often entirely lost. The fact, that the ideas of a definite period are lost and in consequence of gross material disease, admits of the immediate interpretation, that the location in the cortex of these complicated remembrances is determined by the time of their acquirement, from which, as the crudest, but immediate sequence, it would follow, that a sort of layer-like deposit of ideas occurs in the brain, similarly to the formation of the earth's strata. One might be inclined to ascribe the consciousness of the personality, as the latest formation, to the outermost cortical layer composed of projection fibres. Without being frightened by the materiality of this view, there are other data, which stand in the way of using the facts previously mentioned for the assumption of a layer-like localization. For instance, a circumscribed loss of recently acquired memorial images is repeatedly observed in focal diseases of the brain. Cases are known and sufficiently authenticated, where after apoplexy, persons, who had command of several languages, lost this accomplishment, except their mother tongue. Charcot has recently reported such a case. Un-

* Arch. f. Psych 20 Bd. S. 441.

fortunately the difference between the ability to speak and to understand a language has not been sufficiently studied, so that the location of the loss of function in the strictest sense is impossible. Still the facts reported show with certainty that this loss is perfectly analogous to the other focal brain symptoms. If we now assume that it is a matter of a purely motor defect, which, according to all our previous knowledge, would have to be located in Broca's convolution, so in consequence of our above assumption, apoplexy completely destroys very definite layers of this convolution, situated close above or below, while the mother tongue would be left wholly unprovided for. This assumption seems extremely improbable. Whereas the following idea has in its favor a large number of other well known facts. The cells and fibres of the cortex are extremely delicate structures, which in a certain measure remain in an embryological state so long as they do not functionate. Through function they attain a certain resistance and this increases proportionately to the exercise of the function. This hypothesis is exactly analogous to Cohnheim's for the muscles, in that they can only grow and increase during their function. We now assume, that in the vicinity of a nodal point in the brain, there is a centre, like Broca's convolution, where besides cells and fibres, which have long functionated and therefore possess a certain resistance, there are those whose nutrition is impaired by slight injuries. Thus it seems perfectly plausible, that the collateral effect of an acute focal disease extends to the adjacent areas to destroy the one element, while it leaves the others intact. This hypothesis serves to similarly explain cases of general weakness of memory. As here in a circumscribed place, so there an injury implicating the whole brain mantle must be assumed, which only the resistant elements could withstand, and so it is not strange if the degree of this resistance is a function of time, in other words, only those memorial images disappear, which are of a relatively short duration.

The consciousness of the personality includes one of the highest functions of the brain, which has always

been the enigma of all enigmas, the phenomenon of self-consciousness. In this phenomenon it looks as if the same organ, the brain, which is believed to be able to perceive, would at the same time be the thing perceived. But it is impossible for one and the same thing or being, which perceives, to also be the object of perception. This inconsistency shows what vagueness prevails among philosophers as to the nature of the matter in question, who still think they should here admonish against overestimating the import of certain anatomically physiological opinions. Reflect, that the consciousness of the personality may be regarded as a sum, whose value is a function of time, then that the perceiving individual at the moment of the perception is a definite mental personality, which differs from that of the moment before by an appreciable value, so it cannot be surprising, that this last value is able to perceive besides the matter of the sensory perception the value of that sum preceding it in point of time. In other words, the mental personality does not perceive itself, but the personality of a few moments, hours, days or years before, and it is a delusion to believe it has remained exactly the same.

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OUTLINE OF PSYCHIATRY IN CLINICAL LECTURES.*

PSYCHO-PHYSIOLOGICAL INTRODUCTION.

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VIII.

THE ACTION OF CONSCIOUSNESS DEPENDS ON THE CONTENT OF CONSCIOUSNESS. PREFORMED ORDER OF THOUGHT CONNECTIONS. NARROWNESS OF CONSCIOUSNESS. DEGREE OF CONSCIOUSNESS, ATTENTION AND WILL. ABILITY TO ATTEND. AFFECTS. NORMAL QUANTIVALENCE OF IDEAS.

We will glance back over the path we have come. The organ of consciousness is now shown to be populated by a sum of potential energies, the memorial images and their various groupings, from the simplest to the complex, for which the term remembrances seems adapted. The natural classification of this content of consciousness into the three divisions of the world, body and personality has been given, a classification, which, as we will see later, is

*Translated by Dr. W. Alfred McCorn, Resident Physician "River Crest," Astoria, L. I., New York City.

required for the practical observation of patients. But observe, that in this, as it were, inactive consciousness you have an inanimate machine. It will now be our purpose to consider more fully the action, which occurs in the organ of consciousness thus constituted. But we must maintain, that this organ is exclusively composed of nerve fibres and ganglion cells, that we then can only require of it the course of certain processes of excitement and in its diseases a morbid change in these processes of excitement. What we had previously considered, had no other premises, for the content of consciousness, the sum of all the acquired ideas had for us no other meaning than a permanent molecular change in definitely organized fibre and cell masses in consequence of processes of excitement having occurred. The capacity of nervous elements to be permanently changed by past stimuli, we called memory, a phenomenon which has its counterpart in inanimate nature in the magnetization of iron. We then have to deal with existing processes of excitement in a complicated organ whose action definitely depends on prior processes of excitement, and next have to investigate in what way this dependence is manifested.

If we ask a question of a person about some science, with which he is unfamiliar, the sense of the question is not comprehended. No one will be astonished, and yet this example proves the fundamental proposition, that any new possession of ideas, here the comprehension of the question, can only be attained by the presumption of the present possession being definitely constituted. We designate this process, occurring at the time in the consciousness, thought, the idea excited by the question the initial idea, and the result of thought, which is contained in the answer, the terminal idea, so in the above example thought did not occur, because the proper initial idea was not in the individual's possession. Hence if we maintain, that thought as a rule follows an external stimulus, some sense perception, it then very gradually seems necessary that the sense perception be understood. A sense perception, which has never occurred before, does not therefore follow the usual

course of a definite thought; for it is not only uncomprehended, but very imperfectly received, as anyone may observe when listening to the sounds of a foreign language. The perception then presumes, for it to be perfect, a definite mental possession. Very similar to this simple example of thought is it with the more complicated processes of thinking, in which the initial idea is often a very ordinary sense impression and may therefore escape our attention. These more complicated processes of thinking are generally carried on in previously worn paths, hence the comparative rarity of really new thoughts. Thought is universally dependent on a possession of ideas long acquired and definitely arranged, in other words, it is generally a mere repetition of the same processes of excitement in the same arrangement as they have repeatedly occurred.

On what does this arrangement dominant in our ideas depend, which is manifested in normal thought? As you recollect, we called the union of ideas association, the arrangement dominant in the ideas may then lead us to conclude the possession of definite associations, which are approximately the same in all individuals. Our question then will be: In what way are these associations generally present formed? In part I may add what has already been said and is familiar to you. In speaking of the consciousness of the world I have already called attention to the fact, that in a certain measure the natural arrangement and sequence of things are reflected in our brain, and thus a regular union of definite phenomena with each other occurs in our consciousness, as furnished by the world. To the attributes of things, which we have found to be quite constant and little changeable, belong also their relations to other things, be they animate, be they inanimate, and particularly to our person. That ice comes from water when it is frozen, and steam when it is boiled, is an experience, which we consider regular, owing to its constant occurrence. It is thus reflected in our brain that an association between the ideas of water, ice, steam, cold and hot occurs in a definite order. The sensation of cold to the skin can awaken the idea by

association that the water is freezing. The association is somewhat complex when the observation of the thermometer leads to the same conclusion. Here an optical perception is the initial idea and the association with other ideas learned. If the simplest phenomena of nature are forced upon us in their regular order, so it is the same with the more complex combinations of ideas, which we learn by the example of our surroundings. The congenital desire for food is analogous to the impulse with which the phenomena of nature are forced upon our brain. If we have always been in the habit of behaving the same as others in like position, so one learns by the crudest senses from the example of others, that potatoes are dug and cooked to satisfy hunger, then the simplest example is sufficient, that the potatoes must be planted to appease hunger later, where the planting of the potatoes is the terminal idea of a very complex action, which is finally produced by the initial idea of hunger, after the interpolation of a whole series of associations. In the simplest relations all action is governed by examples from the surroundings. The medium, in which a person grows up and lives, suffices to fill the consciousness with a whole series of ideas in a definite order, and the more monotonous the life, the more fixed and unchangeable is this order of ideas, undisturbed by the variety of complicated conditions of life. The focal consciousness, that one has to behave like others, is frequently active when thought, in consequence of mental disease, is wholly preverse: the uncontrollable and resistive patient is often rendered tractable by the example of his fellows. The entire institutional treatment of the insane rests on this principle. On the other hand how thoroughly innate the focal consciousness is in us, may be learned, when in a crowd one participates in some general demonstration with the intention of remaining passive, yet becomes active through the feeling the crowd inspires. The untutored deaf mute may be instructed by example. If no other defect exists, such a person often becomes a useful member of society within a certain narrow sphere of life.

Articulate language is still the chief means for the acquirement of definite order in the ideas. It readily establishes the finer and more exact relation, not only between the concepts of concrete objects, but between these and the results of actions, arrange the latter in point of time and distinguish by fine shading the position of the active personality. For definite complex associations, the *abstract concepts*, which are first made known to us in part by language, suggest abbreviating terms, so that we learn to use whole series of ideas, and by such abbreviations designate definite states of the personality, which everyone is acquainted with empirically, like love, hatred, fear, anxiety, hope, solicitude, etc. In such expressions a whole series of occurrences are at our command in a sort of combination, which is comparable to the concept of concrete objects. The structure of sentences, their logical organization gradually results that we think according to their direction. This at least chiefly differentiates the educated from the uneducated person, for the first is able to use every logical shade of expression.

What I have just said needs further elaboration; you might readily fancy I would identify language and thought. I am far from it, but would merely call attention to the fact, that for the comprehension of language not only familiarity with that spoken, but also the possession of the same ideas as the speakers, is an indispensable presumption. We then assume a certain uniformity of mental personalities, while heretofore we have placed their individual variations, in the foreground. And there is no mistake that the transmitted possession, which we have retained in language by the construction of sentences and the terms for abstract concepts, is chiefly to blame. In all variation of the social medium the epoch, in which we live, still conditions for all normal individuals a definite possession of identical combinations of thought, hence in this respect it is necessary to caution against overestimating the variation of individuals. For psychiatry this is certainly a favorable factor, which facilitates clinical observation.

The question is often argued, whether thought occurs chiefly in words, and how far it depends on them. Many teachers have favored such a dependence and cited the abstract concepts as evidence, that coordinated thought cannot dispense with the abbreviations contained in language. But these abstractions are in great part merely the means of communication, and it is to me incomprehensible how anyone, who accepts the present theory of aphasic states, can think that a person with total aphasia has lost the concept of faith, love, hope, of fear, anguish, hatred, sorrow, solicitude, etc., or of state, society, religion, time and space. The patient's conduct does not indicate it. As much as may the word be associated with a whole series of ideas, still the decisive factor is not the association with the words, but the association of these series of concepts with each other, may it have first been acquired by the word. Language is merely the means of adjustment, the task-master, by means of which of the idea the ideas are forever arranged in series.

What we have above designated as thought, is well illustrated by the process, which Fechner has called psychophysical movement. This psychophysical movement has been compared by Fechner to the course of a wave of excitement, which we may regard as occurring between the initial and terminal ideas. It is evident that we thus transfer the view we had of the course of the process of excitement in a definite nerve area to a whole system of fibres and ganglion cells continuous with each other, and as continuous as are the various early acquired associations. The error is the same as though we compared the movement of a wheel to that of the whole machine, yet in both cases it is a matter of similar processes of movement. If we suppose, for illustration, the curve of the process of excitement is drawn upon a system of ordinates, the form of the curve is of interest to us. We have to consider the spatially extended consciousness of the body to be the axis of the absciss. Over this the curve as an even elevation, must embrace its whole extent, for the consciousness of our

body continually accompanies us while awake, if only in a moderate degree of excitement. If we conform to the use of language, in which by consciousness is understood not its content, but its action also, or the process of excitement reflected in it, so we must differentiate the degree of consciousness in this respect. The degree of consciousness in the curve is expressed by the height of the ordinate, while its extent corresponds to the length of the absciss. If it is a consciousness of low degree, such as we constantly have of our body, and which can never be lost while awake, it follows that the stimuli of the world continually act on the body, and the concept of the body has to be regarded as such a fixed unit, that it is always excited as a whole. By this equable elevation quite a marked wave crest is somewhere produced, indicating the instant of the greatest state of excitement. It is a condition of the human brain that only *one* such wave crest can occur at a certain time. The wave crest indicates the highest degree of consciousness, the greatest intensity of the process of excitement and is empirically always present only once in a unit of time. It was then very pertinent, when we represented the wave of excitement as changing in the psychophysical movement, and it is the wave crest, the second elevation, which essentially changes its place, while the first stage of the elevation continues its whole extent.

The fact that only one wave crest is ever present in any curve, has given rise to the term unit or *narrowness of consciousness*. It is impossible to think, to do or perceive two things at the same time. The astronomer, in measuring time by the pendulum beat as the star passes the wires of the transit, either sees the star and then hears the pendulum beat, or hears the pendulum and then sees the star, and between both factors an appreciable time elapses, which varies in different observers, yet occurs in everyone and is taken into account as the astronomical or personal equation in comparing the results of different observers. In this example the wave crest must be considered as changing from the central projection field of optic perception

to the acustic. The fact of the unit or narrowness of consciousness leads to the supposition that the spatial content of the curve, if it can be computed, always remains the same, in other words, that only a definite supply of living force is ever present in the brain for the course of the psychophysical movement. Fechner has illustrated this proposition by the following example: The miller, who is accustomed to sleep amid the clatter of the mill, awakes as soon as the mill stops. It must be accepted that the acustic perception of the mill's noise has maintained a psychophysical movement in the acustic projection field of the sleeper, which now suddenly disappears; thus the psychophysical movement undergoes such an increase in some other part of the brain, that the degree of consciousness of the awake state is attained. Quite a large number of similar examples may be cited. The further conclusion may be drawn from them, that the spatial content of the curve remains the same while asleep, but the form of the curve differs from that while awake by the above described characteristic wave crest being more pronounced. Still Fechner had advanced the supposition, that being asleep and awake differ in that the place of the psychophysical movement would be different, what is correct in so far as the form of the curve will be admitted to influence it.

If the wave crest is termed the place of the most intense action of thought, the nearest associated ideas must be regarded as contained in the ascending and descending limbs of the curve, hence the continuity of thought between the initial and terminal ideas.

We have various terms for the change of the wave crest, we speak of attention, when it is a matter of perception or thought, of will when acts or a process of association, which precedes them, is in question. Take a definite instance, like the contemplation of a work of art. The attention is then engaged for a long time with an optical perception, therefore the wave crest must be in the central projection field of the optic nerve. Under the influence of this wave crest all associated ideas

are called into consciousness one after another, this is the purpose of contemplation. The attention directed to an object then corresponds to a thought, in which, wholly without our assistance, a large number of preformed processes of association is raised above the "threshold of consciousness." As this fact is a common experience, we believe we are able to voluntarily direct our attention, a delusion, analogous to that of self-consciousness. The more closely a person's attention is directed to the work of art, the more the consciousness of the world and the body, as well as that of the personality recedes. Absorbed in contemplation one may forget where and who he is, but the consciousness of the body is shown to be retained, by the fact that he involuntarily changes his position, turns aside, makes movements of defense, etc., according to circumstances. The dominating wave crest in a certain measure takes a piece out of the consciousness of the body, in which optical organic feelings of special intensity must exist, in any further relation the process is incapable of localization. While the attention was occupied with a definite part of the world, it is immediately diverted and turned to the body, if a pain or an unpleasant sensation affects some part of the anatomy. If very intense, like a violent toothache, our impotency is at once shown by the attention being diverted by our senses. If the work of art, which causes the sense perception, is still present, the processes of association are stored up, as shortly before, but they are now inert, for the wave crest relates to the consciousness of the body and to a definite area. A very intense pain renders thought impossible, what the disciples of Zeno have always opposed. The pain may be borne, but certainly the attention cannot be voluntarily directed to any object. Irrespective of the intensity of the stimulus, which has affected some organ, it here depends upon the associations, which more or less accidentally confer great significance to the momentary discomfort: the least hoarseness catches the singer's attention, the slightest injury to the foot occupies the tourist's completely. The so-called limnal value of sensations depends

in all senses on the presence of general attention. The fact, that it has a definite quantity varying but little in all persons, leads us to conclude, that the attention or, in other words, the height of the ordinate of the wave crest is nearly the same in all normal persons. The limnal value may be extensive, as in measuring the visual field, and certain concentric contractions in the clinical picture of anaesthesia retinae, simply indicate a lowering of attention. In the neuroses after head injuries, railroad accidents, etc., this lowering of attention plays a great role, and no less in the insane.

Gentlemen, you perceive from these remarks, that we possess a means of measuring attention by determining the limnal value of sensations, *i. e.*, the height of the ordinate in the process of excitement attainable by the organ of consciousness subjected to investigation. In the examination of nervous patients this factor is to be taken into account and the procedure so conducted, that the patients are incited to direct their attention at the moment of the examination to the place and kind of examination. You remember I presented to you a patient, in whom it was within my power to demonstrate either a total cutaneous anaesthesia or normal tactile sensibility, according to the method of examination. We then hold, that a lowering of this limnal value under certain conditions indicates a lowering of the degree of consciousness.

The capacity for normal attention is essential for the acquirement of new memorial images and ideas. In the future we will call this attribute of consciousness the *ability to attend* and understand by it something which is comprehended by memory in the ordinary use of the term. To avoid future misconceptions in this matter, I propose hereafter to speak of memory only in the sense that it refers to the old acquired possession of ideas, while by the ability to attend we understand the ability "to impress something on the memory." We may test this ability by giving the patient a problem, a number of several units, a foreign sounding word, etc., to remember. If lost or lowered, it

may be due under certain conditions to a lowering of the attention. But you will later become acquainted with cases of disease, in which the attention is well retained, but the ability to attend is very markedly lessened. We therefore perceive in the ability to attend a means of testing the action of the organ of consciousness, which depends on an independent and conditional attribute of the nervous elements dependent on attention.

A similar relation, as between attention and the ability to attend, we also find between the ability to attend and that of *recollection*. The above mentioned test of the ability to attend reveals to us that under certain conditions *memory defects* are observed. In the above mentioned test they merely consist in forgetting a definite task given the patient. But from my last lecture you will have gathered, that these memory defects often embrace a very long period of time, so that all impressions, events, opinions and knowledge gained within it, seem to be effaced from the memory. We very often meet with the same phenomenon in the insane, or after the course of the mental disease for its whole period or certain portions of it. If the ability of these patients to attend has been tested, and it has been found that it was lost or diminished, hence the memory defect appears to be the readily comprehensible result of lowered ability to attend at the time memories should have been acquired. Still the conclusion, that a memory defect is always due to a loss of the ability to attend in a given period is not justified. Doubtless there are memory defects of other origin. I refer to the remarkable cases of so-called amnesia retroactiva, where a cranial trauma, an epileptic or apoplectic attack had completely extinguished the memory, not only of the time following, but also of the events shortly prior to the accident, then the recollection at the time of complete mental clearness and health. The above cited cases of general weakness of memory may also indicate such a retroactive effect of the disease, which conditions their origin. But subsequently their ability to attend is seen to be very materially lowered permanently.

The gradual gradations from consciousness to unconsciousness are generally distinguished as states of the sensorium by the subdivisions of stupor, somnolency and coma. Still it is not ordinary usage to speak of stupor in such slightly lowered action of the consciousness, that a special examination is necessary to prove it. In the insane we will only exceptionally meet with noticeable stupor, while lowered attention and ability to attend are common.

Gentlemen! We now come to a series of phenomena, which I have heretofore avoided intentionally, but which very often exercise on the process of thinking a very definite, as well as disturbing and inhibitory influence. These are the affective conditions or affects. We are as little able to define affective conditions, as we are pain; both are facts of inward experience, whose identity we presume in all persons, because their expressions and conduct permit this conclusion. We know that pain has its counterpart, the feeling of pleasure. We also know that pain occurs under certain conditions, which may be stated in a general way, that those excitations produce pain, which are too intense for the useful function of the nerves, the conduction of sense impressions, and injure the nerves. We further know that pain occurs when the isolated conduction is broken and the gray matter of the spinal cord encroached upon. Pain is an affection of this gray matter and seems not to occur without it. All this does not give a definition of pain, but shows that it has a definite purpose, an attribute, which must be ascribed to the simplest nervous system and not to vertebrates alone, and furnishes creatures with a sort of alarm signal for the avoidance of such agencies as might injure the structure of the nervous system. Its opposite, namely a nerve excitation conducive to the individual's welfare, seems to induce the simple feelings of pleasure, like that of sensual gratification, sensual pleasure, etc. The same relation the feelings of pleasure and pain have to the spinal organization, the affects seem to possess for the organ of consciousness, yet we cannot here state with certainty that the gray matter is the

sole bearer of this phenomenon. All that is compatible to the consciousness of the personality, to the me, produces a pleasant, what is incompatible, an unpleasant affective state. According to the degree of this affective state, we speak of affect or mood. Here it is also a matter of arrangement for defense, which may be acquired by the brain in the course of its development. Normally all complex processes of association, thinking, as we call it, are accompanied by a moderate affect, a sort of pleasant self-feeling (see above), which Griesinger has aptly termed the psychical tone. This calm, slightly exalted mood of the person in health does not impair the act of thinking, as well as other affects when only of moderate intensity. This even, quiet course of thought we distinguish as the state of self-possession. In all intense, stormy affects, be they of extreme joy or sorrow, anger and rage, the self-possession is lost and the ideas no longer occur in their inherent, preformed order, but are under the biased control of certain dominating thoughts, which perhaps may be equalized by counter ideas. A sort of inhibition of thought thus occurs, for the counter ideas arise by intimation and again disappear, so that a train of thought cannot be followed; we name this state distraction.

Gentlemen, permit me to speak of the fact I have recently mentioned, that every thought is normally combined with a slight affect. After the somewhat teleological definition of affects I have given you, you will not be surprised that the content of the ideas in thinking influences the attending affect. If we assume that a train of thought, which with respect to its contents is advantageous to the individual, has often been repeated, a condition, which is intentional brought about, *e. g.*, for the purpose of education and the formation of character, we will encounter in the mental possession of this individual a group of ideas, which is united with an intensely pleasant affect. Other groups of ideas of the same individual of such kind are acquired, that an intensely unpleasant affect is permanently attached to them. Apart from the excitability of certain groups of

ideas, the readiness of their reproduction or facility of recall will depend on, whether they have been used frequently or rarely. Both conditions are especially clear, when it is a matter of a train of thought, which may be the motives of a person's acts. In this sense we understand by *normal quantivalence of ideas* a very definite gradation of the relations of excitability, which vary in different individuals within a certain limit, yet in each individual conditions in a certain measure a preformed possession from differences of quality among the ideas. The content of the consciousness of the personality thus acquires its diversity and its individual color. The variation in character is essentially conditioned by the different quantivalence of those ideas, on which depend its actions under specified relations. In the norm we must take account of the fact that such *superquantivalent ideas* are difficultly accessible of correction by counter ideas and accordingly become the unconditional presumption for the action. The concepts of honor, modesty, chastity, etc., are such motives for the action of moral individuals. We desire of the action of the consciousness, that the normal quantivalence of the ideas appear. In the insane we will often meet with deviations from this normal quantivalence of ideas.

PART II.

PARANOIAC STATES.

IX.

SYNOPSIS OF THE CLINICAL PROBLEMS. MENTAL DERANGEMENT. MENTAL DISEASE. PARANOIC STATES. THE UNCURED INSANE. PRESENTATION OF CASES.

Ere we undertake the clinical examination of the insane, we will glance cursorily at the problems confronting us. In general terms we call the subject of our study *mental derangement*, an expression that is current among the laity and well adapted to designate all mental states deviating from the standard. Of these we will purposely choose for study the simplest, *i. e.*, those we may hope to understand

without the possession of special preliminary knowledge other than the general views, which have been the subject of our previous discourses. The simplest states of the kind are the changes in the contents of consciousness existing after a mental disease, which fall into large groups, accordingly as they are qualitative: falsifications of consciousness, or quantitative: defective states of consciousness. We meet with far more complex pathological phenomena in the real *mental diseases*, and the more acute and intense their course. The contrast lies between latent states and terminal disease processes, and it is quite natural that the first offer fewer difficulties for the comprehension. If we call to mind the previously established contrast between the contents and the action of consciousness, we have here exactly the same relations. We then find relative by the simplest conditions, when we take up the changes in the contents of consciousness in normal or approximately normal action of consciousness. Whereas during the course of mental disease we witness the abnormal action of consciousness. As the action of consciousness is a function of time, its product definite contents of consciousness, we may therefore define acute mental diseases to be the change in the contents of consciousness, which we see consummated within a definite period. According to the stipulations of normal mental life such changes are combined with various emotions and affective conditions. Acute mental diseases are therefore almost universally accompanied by active emotions, and by the way, it is these, which render difficult the comprehension and treatment of the acute mental diseases. The shorter the duration of the acute mental disease, the more intense will be generally the attending affect, and so, in case it does not terminate in recovery, the greater will be the resulting change in the contents of consciousness, whether qualitative or quantitative.

If we still have to suppose that equally normal intellectual action may occur when the consciousness varies greatly as to the richness of its contents, you will not then

question, that among the persons previously mentioned (1) using only a small number of concepts, proportionately just as many intelligent individuals will be met with as among the representatives of quite entensive knowledge.

Gentlemen! Our next task will then be to become acquainted with cases of mental derangement, which after the mental disease present their residues in form of changed or defective contents of consciousness. The action of consciousness is again normal, the grave affects, which accompanied this change, have disappeared. The patients therefore are not entirely free from affects, but in general free from morbid affects, so that the latter, even when they are connected with the changed contents of consciousness, are not special symptoms, but comprehensible by the same standard as in the sane. We now find a very similar condition in many chronic mental diseases. These present us the picture of a slow and gradually effected change in the contents of consciousness, a process then that also happens to the normal organ of consciousness, but is here due to internal morbid changes in the organ. The contents of consciousness of sane individuals actually undergoes a constant increase even to very old age. This applies especially to the consciousness of the personality, for it implies the sum of the original data. When the parity is effected by slow disease processes, we observed a very gradual change in the personality, without the normal preliminary conditions of the change being given in external relations. The intense affects, which are not spared the sane, will often start from the morbidly changed contents of the personality, without it being morbid of itself. If we try to complete the analogy with brain diseases, the gradual change in the contents of consciousness is to be compared to the gradual aggregate of focal symptoms in the instance of a tumor of slow growth and replacing the brain matter (not merely pressing upon it). As in such cases, the symptoms of the mental disease of an extremely chronic course bear the stamp of incurability from the first, which in this instance is due to

(1) Alienist and Neurologist, Vol. XX, p. 166.

the complete fusion with the normal contents of consciousness, in the former to the purely local effect of the destruction. It is almost superfluous to say, that just as the changes in the contents after acute mental diseases—with exceptions still to be mentioned—represent incurable states, our clinical material will chiefly consist of incurable, so-called "old cases," and also of certain, still progressive, cases very closely related, but fixed in their external manner and manifestations of the action of consciousness. The majority of inmates of many years standing in large insane asylums consists of such patients, without the proper value usually being placed on their differentiation into two categories, afforded by their mode of origin. If from this material we eliminate the defective states, we may embrace the still very large number of cases remaining under the name of *paranoic states*, because they present the common sign of a pathological change in the contents of consciousness, in other words, a falsification of consciousness. The falsification of the contents of consciousness is either residuary, when the result of a mental disease, or the expression of a chronic progressive mental disorder.

For a further classification of the *residuary falsification of consciousness*, their extent will naturally be decisive. We have seen, that we may speak of three different parts of consciousness: the personality, the world and the body; for brief designation of symptoms occurring in each of these I propose the terms autopsychical, allopsychical and somatopsychical. It is a matter of *residuary autopsychical falsification of consciousness*, *e. g.*, in all of those numerous cases, which may be discharged improved after the mental disease and cannot be called recovered, for they do not have a perfect appreciation of the disease (see Alienist and Neurologist, Vol. XX, p. 378). The false ideas, chiefly false judgments, of these individuals usually refer to their treatment and the necessity of detention in the asylum, to which they owe their relative recovery, and as they are strengthened in their opinion by similar false judgments of other patients at the time of their asylum residence and

believe to have witnesses in them, so is it explainable, that, according to the temperament and character, they complain more or less energetically and bitterly of the institution and discredit it. I recall to your minds the professor and Doctor of Philosophy discharged and improved, who had again taken up teaching, and the wine merchant treated here years ago and who now has a fine business, both of whom have gone to the highest officials with their complaints of the injustice suffered at the hands of the Clinic. A part of the attacks directed of late by the press against our management of the insane may be traced to such sources.

As you see, this point is of great practical importance. Not only the alienist, but also the medical profession and the public dependent on its aid, has an interest, that the explanation be carried to the farthest limits. I therefore go somewhat more fully into it by starting from my remarks on the consciousness of the personality in my seventh lecture (1). A lack of appreciation of the disease practically amounts to the same as the increase in the aggregate of memories of a person about a certain number of data not corresponding to the reality, such as may be gotten from a dream. If we add these, often very fantastic, as actual members to our store of memories, what incalculable consequences would arise for our actions, our opinions of men! But it is exactly the same with the falsely judged data of the insane and retained as such in their memory. I must now remark that the lack of appreciation of the disease may vary in degree. In acute mental diseases it is quite common, that the acme of illness occurs in the beginning and the patients then have an appreciation of the more severe symptoms of this acute stage, but not of the time following. It is natural that a certain credence is placed in the statements of such apparently rational patients who regard their admission justified, but not their retention in the asylum. If the acute stage, from which the appreciation of the disease is gained, occurs at a later period, the

(1) See Alienist and Neurologist, Vol. XX, p. 378.

conclusion seems authorized to the patient, as to all the laity, that the commitment to the asylum and the impressions there gotten, might have caused the disease. Further the lack of appreciation of the disease is not always an incurable condition, but it quite often occurs that the memory of the supposed facts of the illness and the affects combined with it gradually fade in the course of time, especially when the normal stimulus of regulated action is not wanting. The same patients, who have once bitterly complained, now generally refer reluctantly to their institutional life, say that it is half or wholly forgotten and their aversion for the physicians and personnel has no practical consequences. You will remember that we have repeatedly made use of this consideration, when we have favored a return to civil life and the taking up of an occupation adapted to the ability of these patients, who have not a full appreciation of their disease, in spite of our long expectation.

Unfortunately a second large category of patients is not destined to return to civil life, although their mental disease has terminated and not unfavorably. But they are distinguished from the first category by the fact, that they present, beside the complete lack of appreciation of the disease, fixed delusional ideas, which belong to the great group of *explanatory delusions* to be studied later. I have already intimated, that it is to be considered merely the logical sequence of the lack of appreciation of the disease, if these patients regard their asylum residence as a wrong done them. A step further leads to the very natural *idea of persecution*, that the purpose of the asylum residence is hostile, either to take the patient from his business, to injure him civilly, to put him away temporarily or forever, or even to make him crazy by the enforced association with the insane. There are then usually certain persons, if often merely executers of a higher power, who are regarded as persecutors and enemies. The further consolidation of this delusion system varies greatly according to the consciousness of the personality (individuality), as well as the energy of the action by reason of the motive so gained.

If the source of persecution is sought in large corporate bodies, like the church, Free Masons, or state officials, the executive organs, acting under compulsion, are occasionally blamed, but first the conjecture and later the certainty, which is the source of the persecution is directed against single persons, according to the individual data, as *e. g.*, in the common case of the husband suspecting his wife, the real purpose of the asylum residence being to make an adulterous relation possible. In such cases the physician is almost always charged with being an accomplice, and he is the next tangible accessory to the intrigue. In many cases an explanatory delusion of persecution later occasions the further explanatory delusion of *consecutive grandeur*, when the requisite co-operation of the officials very correctly leads to the opinion, that such an improper procedure can only have reference to an important person and the power of the state made to serve the purpose of the persecutor. All these patients cannot be discharged, for they do not conceal their proneness to violent and generally dangerous actions. The one root of their delusional system, the detention, is therefore not to be removed, and hence the delusional system is constantly supported and strengthened. But within the asylum in the course of time the affect may be lessened, especially by becoming habituated to useful employment, and a passibly contented existence led.

As representatives of the third category of old asylum inmates, I first present to you the patient Rother, 61 years old, whom I have known for 14 years, that is since 1871, as a terminal case of acute mental disease, of which unfortunately we have no farther data. Since then he has led an active life within the asylum, been quiet and well behaved, with the exception of brief periods of excitement at intervals of years and generally due to some interference with his work, and presents a normal physical condition. He goes in and out at will and has a key to the garden and his ward. As you see, his conduct exactly corresponds to the situation. He is polite and obliging, without being obsequious, evidently confides in the asylum physicians, is

satisfied with his home in the asylum and his work, and if he wishes to be discharged, he can be readily quieted by the assurance that here he is free from care. He seems perfectly able to take the steps necessary to secure a position after discharge. His answers are prompt and in accord with his degree of education. His circle of interests seems no narrower that may be expected after 24 years of life apart from society. He keeps informed from the papers as to the most important political data and news of the day. Attention and ability to attend may be shown to be normal. So it seems as though we have a sane person, one of those unfortunate victims of asylum physicians' neglect and unscrupulousness, who are so often wrongfully held, if you will credit the statements appearing daily in the newspapers from well meaning, but uninformed and therefore at least imprudent philanthropists. I do not doubt, that a commission of laymen permitted to discharge patients in accord with their own opinion—the general reformatory idea of these philanthropists—would pronounce the patient sane, and the more so, for he is circumspect and reticent before strangers. But he gives us his whole confidence and frankly relates his experiences, after once gotten to talk. First of all it is remarkable that he knows nothing of the mental disease he had, he came to the hospital with an acute febrile trouble and regards it really wrong or an error, that he has been kept so long, if he also admits the physicians may always have meant well by him. He tells of a fight with one of his garden hands shortly before coming to the asylum. He had been thrown down stairs by this person and had his neck broken. (Who?) (1). "Why I." (But are you not alive and sit here?) "Well, yes, but the other probably lies there still." (What other?) "Why, Rother." (Is it possible that you have been dead?) "Of course, everyone has a double."

The patient also relates that he has witnessed things,

(1) The parentheses here imply questions. Trans.

which would not be believed: he has one been a steer and and as such been inhumanly tortured and then slaughtered. He describes how a ring was put through his nose and he dragged away. He has also been crucified once and with two thieves. (Like Jesus Christ?) "Yes, just so," (Are you Jesus Christ?) "Yes, I am Jesus Christ."

He further states, that he has also been Gottfried von Boullon, and describes the armor he has worn, and he has been a blue bottle as well (he means a fly) and as such flew about.

If we here meet with the strangest ideas in the consciousness of the body and the personality, the patient no less has the most perverse ideas of the world. From the beautiful garden, where he has last worked, a pair of stairs lead down to extensive subterranean caverns. Various fabulous monsters are there: large snakes, beasts of prey. This cavern extends under all of Breslau and how much farther is unknown. The sun lights it and the earth is seen to revolve about it, like a large ball. (Does it not fall, or is it supported?) "It rests on a large pointed stone."

He has traveled extensively. In three days he walked from Europe to America over a causeway about as wide as an ordinary road. From time to time he found a tavern where he could spend the night. On each side he saw the blue sea and the most beautiful ships. He once went around the Black Sea in a few hours. They were engaged in draining it.

Regardless as to how the patient has arrived at these numerous false ideas, you will admit that it is a matter of a falsification of the contents of consciousness in the extreme. All three parts are equally affected, but in such a way that the most contradictory ideas exist simultaneously and do not interfere with each other, that the most impossible is not sensed as contradicted by actual daily experiences. In a certain measure it is a consciousness fallen to pieces, so, as you see a state of "disintegration of the individuality" completely excludes any systematization. Therefore we cannot speak of a real delusional formation,

and the absence of any delusion of persecution or grandeur occurring from logical thought will seem perfectly natural to you. The surprising lack of judgment displayed by the patient in regard to the morbid contents of his consciousness rarely occurs in ordinary life. Still he appears perfectly competent in his work. He judges his fellow patients in great part falsely, for he recognizes only the disturbed and excited to be insane. That such a person cannot live in society, cannot care for himself and be self-supporting, needs no proof, he is forever assigned to institutional care.

This patient is in a measure merely the paradigm of all cases of extensive residuary falsification of consciousness. The extent of the derangement prevents the construction of a delusional system. But the relatively complete recovery from the disease process renders possible an approximately normal intellectual action within the circles of interest of his occupation and so an active life.

X.

PRESENTATION OF CASES (Continued).

The patient, I present you to-day, is a typical example of chronic *allopsychical falsification of consciousness*. Mrs. Reisewitz, 45 years old, is the widow of an agent, whose disease has gradually developed for five years from just appreciable beginnings and will probably progress still farther. On entrance she attracts your attention by her formal and rather dignified manner, and her facial expression is one of solemnity. On being questioned she stated she has been in Dalldorf, was brought here from there and those about her there must have come to Breslau. She does not recognize this to be a hospital, it is a "holy place," "God's house," everything has a churchly solemnity. The purpose of her stay here is the preparation for an important position later, for now she is very unworthy, and it is a great honor for her to be received here. Perhaps she owes it to a higher priesthood, to whom she has appealed in her troubles. It is generally known that she has had much trouble and misfortune, her name is familiar to

everyone in Breslau. Except this remark indicative of exalted self-confidence, she preserves a submissive nature, rises and bows whenever spoken to and does this to all her fellow patients, even the totally demented paretics. She often apologizes for having behaved improperly and implores that her words be not too strictly weighed. She considers all her fellow patients men in disguise, mostly priests of high position, who are here partly for penance. The physician also belongs to the priesthood, if he may have been a physician formerly. She calls a 13 year old girl the Duke of Arco, the head nurse Emperor Frederick, the other nurses certain princes. All these persons have been with her in Dalldorf, if they are now changed in appearance. She alone has not changed.

You see, that the facts, we have gotten. permit us to conclude the existence of a so-called systematized delusion, which is essentially of a religious nature, and has developed an autopsychical falsification of consciousness, for the patient, after undergoing a period of temptation, will have to play the role of a saint or prophetess. But especially striking seems the interpretation of the persons and general surroundings in a sense corresponding to this religious delusion. With her apparent self-possession, quiet behavior, perfectly normal general feeling, we will not be able to assume, that her senses delude her and therefore incapable of correctly observing the things and events of the world; nevertheless she explains everything in the sense of certain prevailing ideas and so often of a religious nature. She then affords us an excellent example of disordered secondory identification, owing to the contents of consciousness being changed by a chronic mental desease. I will refer later to the anamnesis, so characteristic of cases of this kind. With respect to the present state it is to be remarked, that the patient is not entirely free from hallucinations. Those of hearing appear now and then, while those of smell and subjective cutaneous sensations are quite frequent. The first are interpreted as blessings, perhaps the voice of God, those of the other senses, "the inhalation" of chloroform

and the "electrical treatment" leave a debilitated feeling and are usually patiently submitted to as tests, but yet occasionally cause fits of anger with violent cursing. A longer examination would be tiresome, nevertheless correct data are obtained as to the personal facts of the patient until the beginning of her illness, hence memory defects do not exist, attention and ability to attend are approximately normal.

Another patient, in whom the consciousness of the world has been perfectly retained through the whole course of the disease to the present moment, while the consciousness of the body, but especially of the personality, shows marked changes, you will perceive to be the opposite of the former case with such pronounced allopsychical falsification of consciousness. We may consider it an example of a residuary *somatopsychical falsification of consciousness*. Tscheike, a cook, 45 years old, was treated for four months at the Clinic five years ago, and transferred from here to the Berlin insane asylum. Discharged from there relatively improved, she has, after many futile efforts to resume her trade, finally come back to our Clinic. The period of her first stay may be regarded as the acute stage of mental disturbance, which had developed very gradually for two years and was accompanied by various severe derangements of the the general condition. She is now entirely free from such troubles, looks well, bodily functions are regular, her weight is maintained and her conduct to-day shows nothing out of the ordinary. Her answers are prompt and rational. She is perfectly oriented as to her surroundings, her present position and her former illness, as well as to all her personal relations, and has a specially good memory for certain details of her illness. Her attainments are in accord with her station in life and degree of education, her disposition, in spite of a certain feeling of illness, is more exalted than depressed. On the ward she does not always behave properly, is only occasionally to be induced to go to the sewing room, and usually perfers to meddle in various affairs that do not concern her, to give advice, annoy

her fellow patients by jests and childish pranks. For instance she jerks off the bed covers, unexpectedly pours water in their faces or steals food from them or the kitchen. The physician's visits are generally disturbed by her interruptions. She disobeys the medical orders and when put to bed for discipline, she does not hesitate to come on the hall undressed. You see, that the patient's conduct is far from normal, but requires so much consideration, and patience from those about, that she can only live under the special conditions of an asylum. You will see subsequently that many patients are in the same position, and essentially in consequence of a certain quarrelsomeness are incapable of living otherwise than in systematic asylum relations, owing to an assuming, largely egotistical conduct requiring constant attention after the mental disease. But on closer inspection our patient is found to entertain a large number of false ideas. At the time of her illness she had a bronchial catarrh. She was then so filled with mucus, that it has produced in her body a primitive man, lamprey or an amphioxus—she uses these three term synonymously. The primitive man has troubled her greatly, has inhabited her body like a living child. It had primarily originated in the diaphragm, has a transparent, pinkisk body, of mucus—as she might have seen it in the aquarium—has a cherub's head and a pointed tail. It is so situated within her, that its head is in her brain, the body along her spinal column, the tail over her anus. It has ofter tried to force its way out, as she has noticed from the pricking in the top of her head and at her anus. It lives on what she eats, but principally on what she drinks,hence she must drink so much. Since then everything has been double in her, double nerves, double pulse, double brain. From that time she has also had a very young face, like that of a fifteen year old girl with a cherub's head, and her pitted skin has become smooth. (Patient actually has numerous pock-marks on her face.) During her illness she once vomited the right half of her brain, intense headache and nausea having preceded, the vomit looked like yeast, so she felt that the right half

of her brain was damaged. Later the affected hemisphere has been restored. From the illness she has also obtained a double mind, "in one part all that concerns her work, in the other politics and science." In fact the patient seems to definitely differentiate her early mental possession, which comprise essentially her interests as a cook, from her thoughts since the beginning of her disease. She believes she has a "knack for everything" and has apparently read a number of books, in which she could take an interest, but did not understand. She speaks of Haeckel's "Primitive Man or Amphioxus," but believes that Haeckel implies that they are the same. According to her idea a person has twenty-seven senses: "thoughtfulness, combativeness, hygiene, language, literal sense, color sense, art sense," the others do not occur to her. She writes essays on political topics, and I will read you the beginning of one: "the lowest class of persons is utilized to save life of the higher. Consequently poor individuals contract acute or the opposite. This stomach trouble is combined with chlorosis", etc. She claims especially to know something of medicine, to be able to treat fractures, apply dressings, cure diphtheria, etc. Hence her annoying interference during the physician's visits. As to the origin of these falsifications of consciousness, in part somatopsychical, in part autopsychical, we will study fully later. Here I will merely say, that in this patient we have observed the period of origin of the somatopsychical delusions and therefore can prove them due to abnormal bodily sensations. If such a fanciful idea could arise from her own body, we must realize the peculiar position in which such a patient is placed. These patients are wholly unable to express the morbid feelings, heretofore entirely unknown to them, completely devoid of analogy with the normal sensations of the body. According to the individuality similes, similarities, analogues are then obtruded on the consciousness to aid in their description. At the time of the acute affects only too often do such patients complain how indescribable, unspeakable, unparalleled in their kind are the feelings they suffer. The more or less

distinct localization then affords the chief basis for the construction of an explanatory delusion, whose several components are taken from the individual's physical knowledge. Our patient has apparently been crudely influenced by Haeckel's writings, when formulating her delusional system. A further explanatory delusion is the basis of the autopsychical delusion, that by the disease she has come into possession of new intellectual power relating to politics and science. The self-perception of a changed trend of thought, due to a fundamental alteration of the contents of consciousness, expresses a point, which I will discuss more fully later. The absurdity, apparent mental enfeeblement in this intellectual process accompanied by exalted disposition is fully explained by the inconsistency with her previous course of education.

An even better picture of residuary somatopsychical falsification of consciousness you will call to mind from the previous semester. I then presented to you a woman, 65 years old, of whose past we could ascertain nothing definite. According to her statement she was seriously ill 18 years ago, when her whole body, but especially its external contour, had been deformed. She complains of her frightfully ugly face, her clumsy and awkward extremities, the altered complexion, her imbecilic expression, etc., while in reality she was a graceful old lady of good form and relatively intelligent appearance. Abnormal sensations did not exist, and there were no disorders of the general condition. Nevertheless on careful examination other marked changes, which might be called defects, could be proven, and such defects were especially prevalent in the allopsychical spheres. Besides with relatively good attention, the ability to attend was appreciably blunted, so that we concluded the residuary falsification of consciousness was complicated by senile mental derangement. The first seeming clearness of the case thus proves to be deceptive.

Clearer by far is the clinical picture of a residuary somatopsychical falsification of consciousness in the other case presented at that time. It was, as you remember,

the case of a young man, Biega, 20 years old, who claims to have been deformed by his disease, so that he is hunch-backed, the upper ribs sunken, the lower ones awkwardly prominent, the shoulders appreciable lowered. Nothing was to be observed objectively of all these changes, they no longer caused the patient any trouble, but he well remembered the time when this change had appeared with pain and indescribable sensations, a period, which lasted for years. Had it been possible to get the patient to talk, it could have been demonstrated that he had no defects, and by a special test it was possible to show that attention and ability to attend were normal. But yet at the first glance the patient's whole bearing and external appearance gives the impression of profound mental derangement, his bent posture, his reticent answers, his gloomy expression, cold extremities and cachetic complexion attract our attention. Besides we learn, that he is wholly inactive, avoids his fellow patients, eats insufficiently and is very negligent of his personal appearance. The suspicion, that the patient suffers from bodily sensations is confirmed by an examination, for it reveals that he thinks he feels an obstruction and occlusion of his intestinal canal near the anus, complains of the severest pains and various abnormal sensations in defecation and, if with the reservation of hopelessness, besought medical aid for his peculiar trouble.

Mrs. Schmidt, 57 years old, the widow of a mason, whom I next present, appears perfectly well, physically, complains of no derangements of her general condition and very quietly and self-possessed tells of her troubles. The cause of her compulsory conviction was the annoyances to which she had been subjected at home, and to which she had replied by threatening her relatives and other inmates of the house, she had been squirted at and sprinkled, and been shot at from all sides. Yet we will let her tell her own story. "I felt that it was squirted on my skin in a fine spray from a syringe, generally the skin of my face got it. It happened when I stood at the window, that I heard a signal, and then I got a squirt, often in the eyes,

so that I could not see. At first the bone was also injured, it became red and inflamed, and I also heard the shot fall, which have wounded me in the arm, breast and other parts of the body. Something has struck the skin of my feet, particularly the heels, so that I could not walk for eight days. Occasionally I get strong injections when I go to bed, which stupefy me. At any rate the walls were hollow and passages have been made, from which I have been squirted. I do not know who persecutes me so, I consider it a chastisement, but do not know who has the right to punish me so."

She then tells, that the medical visits, which had preceded her conviction, had not been properly made. A woman dressed in the clothes of Dr. H., whom she knows, had been sent to see her. But she had recognized by the beautiful teeth that it was not a man but a woman. Here in the asylum the persecutions have in great part ceased. Still we learn from the clinical history that she has complained of having been annoyed about her genitals during the night and of having seen a shadow. On the ward she has complained of other bodily abuses. At home her teeth had been forcibly broken off and her lips glued together and tightly closed by a viscid substance. Burning pains in the face, of which she often complains, she explains by the fact that some corrosive substance has been sprinkled over her. With regard to the development of the disease, we have learned from her son-in-law, that for five years she has believed herself persecuted in this way and for some years before had been solitary and mistrustful and no longer went out. She had periodically complained of voices, which came from the wall, without expressing herself more fully. Owing to distrust she finally discharged the servant girl and did the housework herself. She had not owned one of her grandchildren, but claimed it might have been substituted. She had finally threatened to break all the windows in the house.

The patient is evidently afflicted with a delusion of persecution of chronic development, and we have to regard

a number of morbid sensations and tactile hallucinations as its basis. This patient also notices changes in her body; but contrary to the previous patients, she ascribes these to external agencies and so, besides the somatopsychical, there is an autopsychical falsification of consciousness. We will find the same delusion of persecution in the following case, yet of entirely different origin.

Mrs. Reising, 50 years old, the vigorous and apparently well nourished widow of a mason, complains that she has been enticed away from home and brought here by a policeman. This commitment to an insane asylum, counter to her wishes, is evidently an act of revenge on the part of Mrs. W., who is acquainted with the Police Commissioner of the district and is intimate with him. Thus it would have been possible for her to use the police for the furtherance of her plans. She has known this Mrs. W., a midwife, for six years. As she, the patient, is childless and having seen that Mrs. W. treated her daughter badly—"the urchin was in the mother's way," she interjected—she had taken the child to bring up. Two years later the child had been taken from her for no reason. In the meantime the patient had learned that Mrs. W. led an immoral life and is a vicious and quarrelsome person. She has noticed soon after the child was taken away, that she must have been slandered in certain saloons, among other things she has been charged with sexual intercourse with the husband of Mrs. W., she has been insulted and annoyed on every occasion, it has been said to her face on the street that she is a whore, etc. Only Mrs. W. could be to blame for it all, for she is capable of it. She has finally made a complaint of "vicious persecution for a year and intentional abduction of the child," but does not know what has become of it. Finally, to be let alone, she moved to the small city K., but has noticed that she is insulted by the people. Evidently W. has written and incited the people against her. She then came back to Breslau and found it worse than before. She has even heard the words whore, prostitute and the like from little school children, and doubtless the midwife, W.,

is to blame for it all. Three weeks before she went to the Recorder about her troubles with W., when, as she correctly describes, an official physician visited her on the Recorder's order. She, the patient, still construes the affair very differently; she believes that the Police Commissioner has illicit intercourse with this Mrs. W., who has induced him to send her, a perfectly sane person, to the insane asylum.

You see, that the woman knows how to give her delusion system a certain appearance of probability. She speaks correctly and in accord with her degree of education and has an intelligent and forcible expression. She has been in the asylum three months. At first she was very urgent for a discharge, became readily excited on refusal and often said things, which indicated a continuance of hallucinations of hearing. She has gradually become more affable and friendly, and the hallucinations of hearing seem to have ceased. Besides she knows nothing of "voices", for she has apparently projected her hallucinations to persons about.

She explains her detention in the asylum by the fact that the physicians must act according to the instructions of the police. We have heard of no bodily complaints except an occasional gastralgia. She lost seven pounds in weight during the first two months, but has gained somewhat since then.

Mrs. Reising is a typical example of a form of chronic progressive falsification of consciousness quite frequently met with. Hallucinations of hearing of annoying and threaten- purport seem to afford the chief foundation, so that we are justified for the present in maintaining a special form of allopsychical falsification of consciousness. We will later get a better comprehension of the case.

(*To be continued.*)

C. Wernicke

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XI.

INTIMATE RELATIONSHIP OF THE SO-CALLED "OLD" TERAMINAL CASES AND THE CHRONIC PSYCHOSES. EXPLANATORY DELUSIONS OF AUTO-PSYCHICAL, ALLO-PSYCHICAL AND SOMATO-PSYCHICAL ORIGIN. AUTOCHTHONIC IDEAS AND HALLUCINATIONS.

Ere we make the acquaintance of new patients, it is necessary to tarry somewhat with those already presented, while they are fresh in your memory. We will first consider the matter of nomenclature. According to the terminology now in vogue all these patients would be instances of chronic delusional insanity or paranoia. If we should thus imply that paranoia should be a well characterized clinical type of disease, it would pave the way to the greatest confusion of conceptions, for the cases differ so

*Translated by Dr. W. Alfred McCorn, Resident Physician "River Crest," Astoria, L I., New York City.

much from each other. We obviate this incongruity when we speak of *paranoiac states* and include among them all those chronic mental derangements, in which a falsification of the contents of consciousness confronts us, while the action of consciousness is well maintained. Consequently we believe the view generally held by the older authors to be right, that by paranoia should be understood a predominant derangement of the intellect. It is very consistent with this extremely broad definition, that the cases possess such marked diversities, not only with respect to the present condition, but also in their genesis. As to the variation of the present disease types, we could readily characterize them more accurately by appropriate names, so we will employ the terms autopsychosis, allopsychosis and somatopsychosis and their combinations. For a falsification of the contents of consciousness embracing all three of its parts the name total psychosis would be suitable, then for one of these, in which one part is prominently affected, the respective name combined with the proper corollary. According to this terminology the gardener Rother first presented would be an example of total chronic psychosis, Mrs. Reisewitz would have to be designated as chronic auto-allopsychosis, Tschieke as chronic auto-somatopsychosis, Mrs. Reising as chronic allopsychosis, Biega as pure chronic somatopsychosis, Mrs. Schmidt as combined chronic allosomatopsychosis. By the corollary "residuary" that group of cases in which the disease process is to be regarded as terminated either recently or long ago, and to which belong the recoveries without appreciation of the disease, would be given their special significance.

The necessity of this last distinction may however lead us afield in the choice of another somewhat simplified nomenclature. Perhaps it would be proper to reserve the name chronic mental derangement exclusively for the residuary cases and to employ that of psychosis with the proper qualifications to the mental derangement still active. If we favor this nomenclature, all the cases of relative recovery (without appreciation of the disease) and the two patients Rother and Tschieke belong in the group of chronic resid-

uary mental derangement, all the others presented or merely mentioned in that of the true chronic psychosis. All psychoses, which have not recovered, but are stationary, come under the group of chronic mental derangement according to this conception.

If such a distinction, for we might admit it as a clinical requirement, must be made, you will ask, if it would not be more proper to treat separately from now on the terminal cases and the chronic psychoses. But my introductory remarks will remind you that the sign of falsification of consciousness occurs in both categories of mental derangement, and as you become acquainted with all the inmates of our Clinic, you will find a very large number of patients in which an immediate decision as to which of the two categories they belong, is impossible, for we have no account of their past. But when complete data are to be obtained, they often extend so far back that inaccuracies and falsifications seem unavoidable, and therefore, just as owing to the comprehensive faultiness of observations by laymen, the subsequent determination and decision between the two groups are not attainable. Hence it is a practical necessity to unite all these "old cases" in a single large group, that of the paranoiac states.

But if we go more fully into the matter we understand the reason of this intimate connection unquestionably present. Permit me to allude briefly to the point of view decisive to my mind, as it is impossible to discuss it now as fully as it deserves from its theoretical interest.

The contents of our consciousness have been represented to you in the introductory lectures as something acquired, and surely acquired by the function of the organ of consciousness. Each new acquisition corresponds to a very definite arrangement of jointly functionating associative elements. The stability of these functional colligations we had found to vary, according to the frequency with which their function is exercised. But that this stability occurs in a proportionately high degree in the most complex associative colligations, we might then conclude that we could very generally allow to the intellect of a person normally

developed a settled, systematic action and conformity to law. Accordingly we will not be too bold, if we assume that in the rise of the same combination of associative elements, the same psychical process always follows and that in this respect the proposition of the specific energy of the sense elements might be transferred to the whole organ of association. The way, in which the function of these localized associative colligations is set in operation, is then relatively of no account, under certain circumstances a morbid internal stimulus may cause different psychical processes according to its localization. From this view all changes in the contents of consciousness attain the value of focal symptoms, which naturally vary in clinical dignity, according as they correspond to states of irritation or paralysis, but however will behave just like the familiar focal symptoms in brain disease.

Take an example from the province of brain diseases. A large cerebral hemorrhage from the marginal artery of the lenticular nucleus or an embolism of the Sylvian artery causes, besides a hemiplegia, at the time of the acute illness a number of grave attendant symptoms, which are to be regarded as collateral effects of the local brain injury. As a result of the direct destruction the hemiplegia continues as the residuary state, but the collateral effects disappear. But exactly the same sort of a hemiplegia may occur, when a tumor of slow growth or a chronic encephalomalacia destroys the same locality, usually in the way that a monoplegia comes on gradually, *e. g.*, of the leg, then a monoplegia of the arm and finally of the facio-lingual region, so that a hemiplegia at last exists. Corresponding to this chronic course severe general symptoms may be completely lacking. But the location of the brain destruction is the same in both instances, and hence the right is proven to compare the residuary focus with the chronic focus. We have equally the right to compare the residuary changes of the contents with respect to the localization of the process to the changes of the contents in chronic psychoses.

As instructive as has proven the comparison taken

from the province of brain diseases, the analogy leaves us in the lurch, when we will employ it in another important question, which we now cannot avoid. When is a mental disease, except in cases of recovery, to be regarded as terminated, when as still active or progressive? In the residuary hemiplegia a doubt cannot exist in this respect, while in mental disease there is often actually great difficulty in deciding and I have already referred to the fact,* that in cases, which otherwise could be considered terminated, new psychotic symptoms, relative to the explanatory delusion, may occur and practically be of great importance. I must now remark, that this explanatory delusion is rarely limited to the delusion once entertained (usually that of persecution, see above), but is often consistently elaborated and new delusions may ever arise from it. This is the process, which as so-called systematization, has always been regarded as a sign of incurability—if incorrectly, as we shall see later. Shall we believe that this progression of the delusion runs parallel with a progression of the disease process? As I have already intimated above, this is not to be assumed off-hand, we must rather admit that a change of the contents of consciousness once effected may have the most portentious consequences for all the rest of the individual's mental life, without new morbid processes needing to occur in the brain, perhaps to the contrary, because a normal action of the intellect and strict logic is retained by the individual. We must soon give proper attention to this effect of a change of the contents of consciousness, the origin of explanatory delusions.

It would take too long and actually anticipate a great part of clinical pathology, should I here undertake to discuss the *explanatory delusion* in its entirety. The hint is sufficient, that almost every one of the acute symptoms, which we will later become acquainted with, may be the source of explanatory delusions. Of the explanatory delusions of the paranoiac states only certain categories are here suggested. We follow the point of view, that they are essential in part for the comprehension of the

*See Alienist and Neurologist, Vol. XX, p. 552.

cases presented, will lead in part to the cognition of a pathological principle, a hypothesis essential and indispensable for the clinic of mental diseases.

The province of *somatopsychical explanatory delusions* is of an almost indescribable variety. We have made the acquaintance of an example in the patient Tschieke. Formulated at the time the supposed changes in the body are felt, they rarely remain so harmless as in the artless admirer of Haeckel. The changes, which the body has supposed to have undergone, are very generally regarded as the effect of external influences and turn the patient's ill-will and hatred against persons and institutions. I remind you of Mrs. Schmidt. Another patient of this kind, whom I have recently presented, manifests his indignation very drastically, in that he thinks he is degraded to a hog by this usage, he repeatedly calls himself a hog, without having a doubt that he does not think somewhat of a real change in his body, but only combines with it the transferred significance above intimated. The real change in the body, of which he chiefly complains, was that his head would be split open by the blows of a hammer; his face was to be pushed down and the crown of his head shoved up, so that his whole head would be broader. The whole change could be effected quite quickly in one night. These changes have been undertaken; how they are to be effected he must leave to the physicians, for he is a layman. You clearly remember with what distinctness this intelligent patient, a merchant 27 years old, who has been insane for three years, developed his explanatory delusion with respect to its motive. He hesitates between three different assumptions. It seems the most probable to him that he was to be made insane and in this way gotten rid of. To my question, if he is insane, he replies, as you recollect, that he considers this very possible. The other explanation, to which he inclines, was that the bodily abuses could be for the purpose of testing him and to prepare him for a higher calling. Perhaps the distortion of his head should especially serve to give the external appearance of a nobleman, the Duke of Sagan. He adds indignantly: "But I do not

take the name, for then I would really be a hog at the bottom of my heart." A third possibility is also vaguely entertained by the patient, namely that the purpose of such manipulations is to amuse other people. "Perhaps the whole affair is a comedy or a farce." In the assertion of these three possibilities he reckons with the certain assumption, that there is an intrigue against him. There is no question but that I will be able to present the same patient to you for several semesters and in possession of the same well retained logic and dialectics, and that he will then no longer vacillate between different possibilities, but present a well-founded single delusional system. Whether this will correspond to one of the possibilities now in doubt, or rather be a new, more complex delusional structure, cannot now be decided. The latter assumption is the more probable, for we now see the patient still susceptible to the constant correction of new psychotic data. The opportunity is not always afforded us to contemplate in a certain measure the process of systematization, as it is possible in this patient owing to his degree of education, his well retained logic and self-possession and his readiness to communicate his ideas. We generally have merely the completed fact of the explanatory idea, but without being permitted a doubt of its significance beyond its purport. I will now call attention to one of the most frequent somatopsychical explanatory delusions, because of its great practical importance. It is usually the persons in the nearest relation (*e. g.*, the relatives) or the officers of the asylum, who are to blame for the bodily torments. In a patient of this kind, in whom the change of the contents of consciousness was of such an extent as to lead many physicians to regard him as a hypochondriac, *i. e.*, suffering with a neurosis instead of psychosis,* his wife was to blame, and she must finally leave him on account of his insults and actual assaults. In another patient the unquestionable indisposition was charged to the officers of the asylum, and consequently he directed all his efforts to secure a transfer to another institution, for he still felt too

*More of this case later.

ill to dispense entirely with hospital care.

Of *autopsychical explanatory delusions* we have an example in the patient Tschieke. She claims to think double since her illness, by which she understands having acquired the ability to talk about scientific, political matters, etc., as well as those relating to her cooking.

One of the most important series of explanatory delusions of autopsychical origin, starts from the phenomena of *autochthonic ideas*, as we will call them. The patients notice the appearance of thoughts, which are felt to be foreign, not belonging to them, *i. e.*, not occurring in the usual manner of association. The explanation of this symptom offers no difficulties, for it is exactly what we can expect from a morbid irritant acting on a definite locality of the organ of association. We may assume that such a morbid irritation is stronger than the normal process of excitement in the function of association, that it consequently usurps the crest of the wave of psycho-physical excitement, and deranges the otherwise systematic and normal train of thought. At any rate the attention is forcibly directed to the autochthonic ideas and they are felt to be annoying intrusions. In this respect they are closely related to the so-called imperative conceptions, also felt to be annoying, yet differ from them in that the latter are never sensed as foreign, not belonging to the personality, and consequently do not acquire the portentious importance in the whole mental life, as do the autochthonic ideas. Irrespective of the fact that the derangement of association due to the autochthonic ideas of many patients particularly those finely organized, is felt to be annoying and often more annoying than bodily sensations and pains, they are almost without exception a fertile source of autopsychical explanatory delusions. There are only exceptionally such objective observers among the insane, who feel the strangeness of these thoughts and do not give them any peculiar significance.* These thoughts are almost always "created, forced, suggested," also "diverted," by whom and in what

*Still there are such, as a case recently taught me. The autochthonic ideas were the only psychotic symptom and disappeared without giving rise to explanatory delusions.

way, depend wholly on the patient's individuality and the purport of the autochthonic ideas. Religious thoughts are suggested by God, evil ones by the devil, enlightened minds use physical agencies, whose manipulations they usually credit to the physicians. That was the case with the merchant whose somatopsychical explanatory delusion has occupied itself with us, he complains of "foreign thoughts," from which his mind suffers, and very especially, that his sleep is disturbed and in the beginning of his illness had been unable to attend to his business. Also the direction from which the thoughts are "forced" upon him, he says is from above, from the ceiling, probably in consequence of simultaneous abnormal bodily sensations. The patient points to the acme of the situation, in so far as he conjecturally explains the thoughts by suggestion and hypnotism, only that the act of hypnotism was unobserved and performed counter to his will. You will remember how hard it was for me to get the patient to tell of these thoughts, after long solicitation only did he yield. The reason of his refusal was, that his thoughts must have been known to me. We will come across this symptom of so-called "thought-utterance" "*Gedankenlautwerdens*"* from another source. It belongs to the most frequent explanatory delusions for the symptom of autochthonic thoughts, that the patients perceive in the physician the author of these thoughts and therefore suppose they must be known to him. The answer so often heard from taciturn patients: "You know that already" or "You know much better yourself" generally has this purport.

You can see from this example, what an influence the age in which we live must have on the special purport of all explanatory delusions. We have now no less than three chronic patients at the Clinic, whose explanatory delusion is based on hypnotism and suggestion. In the Middle Ages, when religious ideas, belief in miracles and superstition controlled the mind, a corresponding purport of the explanatory delusion was the rule, of which you

*This accepted term originated with Cramer. Die Hallucinationen im Muskelsinn die Geisteskranken, Freiburg, 1889.

can find the most striking examples in the extorted confessions of the unfortunate victims of the numerous trials for witchcraft.

The same dependence of the special purport of delusions on the prevailing ideas of the age, we find especially pronounced in the *allopsychical explanatory delusions*. The elementary symptom, which here forms the most frequent starting point for explanatory delusions, is that of the sense deceptions, by which is understood illusions as well as hallucinations. In our sense the sense deceptions are to be defined as psychosensory hyperesthesias and paresthesias, but must defer the description of further particulars until later. Their effect is always to add to the contents of consciousness a number of false components, which belong to the allopsychical sphere and thus falsify it. By the patients they are usually regarded as singular phenomena requiring explanation, yet their reality is usually unquestioned, for reasons we will become acquainted with later. The explanation generally occurs by the assumption of physical agencies, of which some enemy and persecutor, in more rare cases a friend and protector, make use. These agencies vary in kind according to the individuality, and the system thus constructed corresponds exactly to the patient's degree of education. For the explanation of acustic hallucinations ignorant people most commonly make use of an arrangement, which corresponds to the simple speaking-tube: Holes are either bored through the wall or the walls are hollow, subterranean passages exist, etc. For a time the telegraph played the same role in all who had heard of it, and now it is almost universally replaced by the telephone. For those versed in physics the absence of perceptible wires no longer offers any objection, for Herz's experiments have demonstrated the conduction of electricity through empty space. Optical sense deceptions are traced to more or less complicated optical instruments, simple arrangements of mirrors and projection appliances being the most common. Tactile hallucinations lead to the idea of being sprinkled or powdered, usually of course with pernicious substances, and if there are prickling sensations, the

majority know that it is a matter of the effect of electricity. Also the sensation of stabs, of being exhausted, touched on different parts of the body, etc., is projected outward by the patient. Deceptions of taste and smell will vary according to the knowledge and direction of the individual's thoughts and the supposed effects, but are generally interpreted as pernicious or poisonous. The so-called *delusion of physical persecution*, of which you have an example in the patient Schmidt, depends, as you see, on those explanatory attempts, we will therefore not admit it to be a clinical form of disease or at least only in the same sense as every other kind of explanatory delusion. It must be entirely different criteria, which assign to the thus established delusion of persecution its definite position in pathology. This arises from the fact, that in more rare cases the same hallucinations may be construed favorably as means to impart advice, to exercise surveillance, to protect the body, to inure, steel it against villainy, etc. This cannot alone depend on the variously colored individual purport of the hallucinations, for we will learn by and by that this purport is not accidental, but varies according to the exisfing form of disease and thus is determined according to law.

XII.

SEJUNCTION HYPOTHESIS AND ATTEMPT TO EXPLAIN THE SYMPTOMS OF PATHOLOGICAL IRRITATION. EXPLANATORY DELUSIONS IN CONSEQUENCE OF MOTOR SYMPTOMS AND FUNCTIONS IN THEMSELVES NORMAL.

The discussion of the allopsychical explanatory delusions was not to be evaded here, because a great part of the chronic psychoses, whether temporary or permanent, is burdened with sense deceptions, in the first case at least they have the significance of corresponding to disease periods of somewhat more acute complexion. But still, the second reason is to be added, that in cases of residuary chronic mental derangemeut the sense deceptions may be either permanent, only temporary or occur from definite

causes. This seems to contradict all our premises, for in sense deceptions the action of consciousness is extremely deranged and we had accepted that in residuary paranoiac states the action of consciousness has returned to the normal. Should it not be, we will ask, the certain sign of a disease process still active, in the course of development, when a chronic mental derangement is accompanied by sense deceptions? That this question may be asked proves the difficulty which often actually prevents us from deciding between a residuary mental derangement and chronic psychoses.

It will be well to avoid answering this until I have spoken of a hypothesis, which, in my opinion, can alone disclose the true meaning of the nature of all mental diseases. I begin with the first patient, the gardener Rother, who, as first stated, has at any rate occasionally, if only very rarely, sense deceptions. How is it possible, we ask, that such a large number of false ideas and opinions can exist in the same brain, which are so glaringly contradictory to the reality as well as to each other, and then with well retained formal logic, apparent self-possession and on the whole correct comprehension of the situation? In the face of the fact, which is undeniable, and according to the genesis of the present state, the answer may undoubtedly be: It was an acute mental disease, which has caused this looseness in the established structure of association. We will designate this process of disjointing by the corresponding name of *sejunction* and will not be able to help seeing in it a defect, a breach of continuity, which must correspond to the abrogation of certain functions of association. Because in the brain the different ideas and complex of ideas are not merely co-existent with each other, but are formed into large combinations and finally into the unit of the ego, may depend solely on the function of association. The fact that the patient is unconscious of the incongruity of his various false ideas, indicates that the combination of all higher unions into a unit, the ego, has ceased. If the man consists simultaneously in a certain measure of a number of different personalities, we may aptly designate

his state as "*disinterigation of the individuality*". That this appears so little in his external manner, particularly in his occupation, is accidental and due to the slight demands which his work places on the whole personality. The monotonous employment of the gardener is closely allied to other kinds of work, like that of the farmer, many factory hands and persons engaged in manual labor after definite patterns. If it is the matter of an occupation requiring a very complex personality, like that e. g. of the judge, physician, master mechanic, the disinterigation of the personality would be continually manifested in the vocation.

We will see later, that the majority of all those signs of deranged secondary identification, which form the symptoms of the acute mental diseases, are explainable by the same process of sejunction. Also the changes in the contents of consciousness, which may remain as sequela of these derangements of identification, hence be traced to sejunction.

But we further know, that besides recovery and the residuary changes in contents, there is a third termination of acute mental diseases, that of dementia or mental enfeeblement of various degrees. But, as we will see later, we shall have to deduce dementia from the sejunction process. for we can define it only as an abrogation or blunting of the act of association.

Before the termination in definite recovery a shorter or longer stage may be frequently observed in acute mental diseases, which after the decline of the acute period represents in a certain measure its product in form either of a change in the contents or a quantitive diminution in the function of association. This stage of the acute mental disease, whether paranoiac or demented, is capable of restitution.

All these considerations force us to perceive in the sejunction hypothesis the real nature of the acute mental diseases. As the example of Rother teaches, sejunction is demonstrable at once in many old cases. In other cases the unmistakable progression in the change in the contents, may lead to the same chronic terminal process, although it

is less conspicuous. On the extent to which sejunction occurs, will then depend, whether the disease type finally passes into a state of defect, dementia.

So we see that the sejunction hypothesis affords us the key to the comprehension of the chronic as well as the acute mental derangements, at least their most important symptoms, which we may compare to the phenomena of abrogation in brain diseases. But it is unmistakable that another series of symptoms is not explained, I mean those which we have comprehended as symptoms of irritation, like the hallucinations. Of these the better investigated pathology of organic brain diseases gives us no information, for the most familiar symptoms of irritation in this province, localized spasms and contractures, are completely unknown to us with respect to their genesis. We only learn from the brain diseases, that these symptoms of irritation are almost exclusively associated with phenomena of abrogation and thus gain their clinical dignity. In some form therefore a causal connection between symptoms of irritation and the phenomena of abrogation might be assumed. Yet in our province it is different, in so far as certain phenomena of irritation, like the halluciations, belong to the most important and often apparently independent symptoms of mental diseases. Should not the attempt be justified to demonstrate of them a definite dependence on symptoms of abrogation, i. e., here the process of sejunction? This is in fact a requirement, which is forced upon us by the experiences of the clinic; for we know of mental diseases, which present almost exclusively and in their whole course only these symptoms of irritation and still attain the same fatal termination of falsification of contents or dementia. With the extinction of the symptoms of irritation a defect is then revealed to us of an often unexpected extent. Therefore with all circumspection it may at least be said that the process of sejunction may be accompanied by symptoms of irritation and masked by them. It is now entirely within the range of prevailing opinions of disease processes, which destroy the nerves, that they also act as irritants to the nerves: the prevailing theory of the effect of irritation rests

entirely on this basis. The same opinions now obtain for the ganglion cells. The temporary result of the process leading to the death of the nerves would then have to have weight as decisive for the origin of irritative effects. But perhaps a somewhat more definite, purely mechanical comprehension of the irritative effect is possible. As you remember, we have considered the act of thinking as a form of movement, which proceeds in the endless association chain sAzm of our scheme. The memorial images were stations of stored energy, which are constantly charged from the centripetal tracts passing into the projection fields. A discharge of this energy continually occurs, as we may assume, and thus finally the charge of the projection field m, which qualifies it for its manifestations of force. This continual equalization of energy is disclosed by the so-called unconscious action of thought and by the fact that one always awakens from sleep with some idea. According to the general principles of mechanics, it would be expected that the interruption of this current of energy by sejunction causes its regurgitation and thus a local increase of the process of excitement. If the "nerve current" was directly comparable to the movement of fluids, a reflected wave of the nerve current could be spoken of. But even yet in the ganglion cells, as the chief storehouses of energy, an increased tension is to be expected in deranged discharge and continual influx, which may readily run up the psychophysical movement to a wave crest.* In this sense it is not perhaps too hazardous to speak of an arrest of nerve energy. The site of the sejunction process would then be decisive for the resulting symptom of irritation, and the occurrence of hallucinations would permit the conclusion of sejunction of the tracts sA, or at least in a tract relatively near the projection fields of the senses, for instance in the area of the terminal ideas A.

In the case of the autochthonic ideas a symptom of pure irritation seems to be present. However the comparison with imperative conceptions shows particularly that this assumption is insufficient for the explanation of the phenom-

*See Alienist and Neurologist, Vol. XX, p. 538.

enon. The patients actually distinguish very accurately between their own thoughts, which in the case of imperative conceptions are forced upon them against their will, and those that are strange and unexplainable, the autochthonic ideas. The assumption is obvious, that the distinguishing sign is to be sought in sejunction, so that first—in imperative conceptions—it would be a matter of a process of irritation in retained continuity, the other, in the autochthonic ideas, of such in partly interrupted continuity.

The inner relationship between hallucinations and autochthonic ideas is placed in the proper light by this consideration. Both depend on sejunction processes, both seem to the patient like strange intrusions and are usually projected outward. We will have to seek the real distinction between them in the difference of locality at which sejunction occurs, in hallucinations it is the tract sA, in autochthonic ideas the tract AZ of the psychical reflex arc.

It is now comprehensible that the two symptoms of irritation are very closely related to each other clinically, and that transitions between both symptoms are found. This I can prove to you, e. g. in the case of a mechanic, 24 years old, who has interpreted his autochthonic ideas soon after the beginning of his illness as inspirations of the Holy Spirit, but for several weeks hears the voice of the Holy Spirit speak. Also in the patient Bohm, according to his exact statement, a stage of autochthonic thoughts has preceded the hearing of "voices." The fact, that the patients do not exactly know whether they have heard voices or only had the corresponding thoughts, agrees further to a transition stage between autochthonic thoughts and hallucinations. This uncertainty of the patients as to their own perceptions is met with very frequently.

A second inference from our consideration relates to the position of hallucinations in pathology. If our hypothesis is correct, hallucinations may arise without a real morbid process existing, merely by the arrest of the nerve current by sejunction. In front of the site of the interruption of continuity an increase of the amount of irritation above the standard and consequently an excitement of the sensory

brain regions in S may be expected without external irritation, especially when the same process has frequently occurred and has thus become habitual. I remind you of what I have said in my introduction about memory and training of the nervous system. Hence I have finally succeeded in giving you a basis for our presumption above alluded to, that under certain circumstances the hallucinations cannot claim the significance of an active disease process, but are to be regarded as pure sequela of terminated disease processes. A clinical fact, which will occupy us later, appears in an especially interesting light after this discussion. It quite frequently occurs that the recovery from acute mental diseases is retarded by an intermediate stage, often unfortunately of very long duration, in which they besides the delusion of relatively—present no psychotic symptom other than the hallucinations. I call this condition *residuary hallucinosis* and for years at every semester have presented one or more examples of it. You will comprehend how we will have to regard this condition. The acute disease processes are past, but perhaps the multi-topical sejunction has not been completely adjusted, or the pathological habit has so facilitated the recurrent movement, that normal amounts of irritation are discharged into the projection fields of the senses. In such patients all intense affects generally produce hallucinations, exactly in harmony with our comprehension of the symptom. It seems to be in such cases in which an intercurrent, mild febrile disease may induce a rapid recovery. An example of the kind is a gentleman, who had vivid hallucinations for a long time after a severe acute mental disease, so that he had been regarded as incurable. He became perfectly well in a few days from influenza.

After this digression into theory, we again return to the purely practical matter of symptomatology by taking up a further extensive group of explanatory delusions.

The special kind of explanatory delusions, which arise from elementary derangements of the motor reactions*,

*The merit belongs to Kahlbaum of having first referred to the special derangements of movement in the insane; a merit, which is equivalent to that of the description of progressive paresis. Klinische Abhandlungen uber psychische Krankheiten, I heft: Die Katatonie, Berlin 1874.

deserve an intermediate position between the autopsychical and somatopsychical, in so far as a person's motility is expressed in perceptible changes in the body, but on the other hand with progressive degrees of adeptness attained enters the more and exclusively into the service of the personality. At least the so-called actions, but also the most simple movements, which are consciously performed, may therefore be regarded as a function of the consciousness of the personality. The common hyperkinetic states need not now engage our attention, as they exclusively occur in the acute psychoses or at least not rarely in acute excerbations of the chronic psychoses. While parakinetic and akinetic states are quite common events in the chronic psychoses, and their more isolated occurrence (limited to definite muscular areas) then corresponds to a slow aggregate of focal symptoms. At present we will discuss the subject only so far as it is essential for the comprehension of the explanatory delusions thus originating. The independent origin of symptoms of akinetic and parakinetic motility induced by the normal mechanism of association, belong to the most instructive examples of the sejunction process. What was said of autochthonic ideas and hallucinations, namely that they are sensed as processes foreign to the personality, affords us a key to the explanatory delusions of this origin. I remember an old patient, whose constant occupation consisted in walking in a circle of a few feet in diameter and in turning corresponding to its axis. The explanatory delusion combined with it was that she was the earth and must turn. Such a fanciful delusion adhered to in states free from affect, we will naturally meet with only in patients of long standing with variously changed contents of consciousness. But is it very much less strange, when a very recent patient claims it must be a machine hidden within him, which continually turns him around in a circle? Of course in such cases magnetic and electrical forces are especially charged with being the operative agent. Much more rare, but just as evidential are the parakinetic symptoms described by the patient, without an explanatory delusion being associated with it. Thus a patient began to

sing during the clinical presentation, and you remember how clearly she expressed herself, that it was against her will and she could not help it. It is the same patient, in whom I could demonstrate another interesting phenomenon: she usually presented the faulty type of respiration, which I designate as insufficiency of the phrenics, i. e. her epigastrium is retracted during inspiration and the normal expansion of the lower chest wanting. While in singing she presents all at once the normal type of respiration. That the interpretation of this symptom on the basis of the sejunction hypothesis is possible, I believe I demonstrated to you then. Similarly conspicuous by the absence of an explanatory delusion is the example of a lady, whom I am now treating. She has to cry periodically, as well as laugh, without the corresponding affect, and especially complains of the "silly laughing", during which she might be really considered demented. In these cases it is a matter of the decline of a subacute psychosis which was distinguished by a sort of mutual disjointing of psychotic symptoms following each other and advanced to the delusion of retrospective relativity*. These examples, although not related to our theme, may still be given a place here, to show you the symptom in its purity. They are very frequently expressive movements, which occur in the way, then simpler ones, like the facial distortions of anger, menaces with the fist, ejaculation of plaintive tones, wringing the hands, etc., but often complex attitudes and movements, like the attitude of prayer, movements of attack of all kinds, dancing and the like. Such complex kinds of movement, like those of drilling, describing a circle, (see above) fall more into the category of initiative movements. As soon as such movements are permanently established, corresponding explanatory delusions seem to always originate, and these form the rule, as I have already intimated. The purport of the explanatory delusion is either more dependent on the fact or on the form of the movement. The delusion of physical persecution derives its material in part from these parakinetic states, then the belief in supernatural agencies, either

*See below.

good or evil, of being possessed, quiet frequently also the idea of being transformed into an animal. The latter idea leads especially to the utterance of inarticulate growling, movements of biting and contortions of the face and an animal-like use of the extremities, *e. g.*, walking on all fours. In the chronic psychoses, when these parakinetic states occur only for a short time, the explanatory delusions are likewise of short duration, at most it occurs that subsequently the memory of such explanatory delusions occasionally reappears in the form that the patient believes he has passed through some animal transformations.

It quite often occurs that wholly isolated movements, generally of the character of the reactive, have become fixed and habitual in the patients, so that they cling to them all the rest of their life. The more or less silly, eccentric expressions and gestures of the old insane cases often depend on such acquired habits. I know an old patient, who, when conversing, turns up the right upper eyelid with the index finger of the right hand, evidently the residue of an original parakinesis due to abnormal sensations, then psychosensory. Another patient, whom you have recently seen on the ward, generally places the hand to the side of the head while talking, and you remember still another, who has the habit of holding the hand over the mouth while speaking. In all these cases the movement is wholly unconscious, at any rate motiveless, and the patients can give no reason, when their attention is called to it. The "crazy" appearance of many old insane (apparent to the laity) depend on such peculiarities. Explanatory delusions of various sort may start from them.

Of akinetic states the same is true with respect to the extent of the phenomena as of the hyperkinetic, *i. e.*, states of general immobility should occur only very exceptionally in the chronic psychoses, while they seem to be the prerogative of the acute and subacute. When they occur they seem to be of psychosensory origin, as in the well-known example in literature of the man, who avoided every movement, because he believed he had an infernal machine in his body, which might be thus exploded, and similar

seems to be the example of the woman who claimed she was of glass and feared being broken by movement. But perhaps it is merely a matter of residues of acute motor psychoses in these notorious cases. Whereas in the chronic psychoses parts of motion are seen to be quite often affected. These partial akineses are largely of psychosensory origin, like the inability to swallow, which may produce the symptom of refusal of food in cases of an entirely chronic course. The attendant sensation is generally described as closure of the throat, and to it independent explanatory delusions of somatopsychical sort may be added. Next to the refusal of food, mutism is the most frequent form of circumscribed akinesis, and also of psychosensory origin in a part of the cases. Such patients occasionally communicate in writing that their tongue seems to them entirely gone, or that it is swollen, paralyzed, withered or perfectly stiff, but the sensation extends beyond the tongue, for in such cases the accompanying movements of the lips are often absent also. Another time the symptom is of pronounced psychomotor sort, for sensations like those first described are expressly contradicted. Mutism and refusal of food often occur in combination. These circumscribed akineses of psychomotor origin are often due to prohibiting "voices," and that here the hallucinations have no other significance than of terminal ideas put into words, is shown by instructive examples, in which the force of direct physical influence on these movements is ascribed to the voices. The explanatory delusions following, that certain persons, whose voice they recognize rob them of speech or prevent the taking of food, then seem readily comprehensible.

Although the diffused states of immobility, as I have intimated, do not really belong here, yet as the source of various explanatory delusions, they therefore deserve a preliminary consideration, because they occur preferably in the acute excerbations of the chronic psychoses. The supplementary explanation of such states very commonly is, that the patients believe they have once been dead and again returned to life. The restoration of the ability to move is generally conceived as a matter of resurrection, and all

these explanatory delusions of a religious nature, which are suggested by the comparison with the sufferings and death of Christ, are associated with it. The patients often consider themselves the returned Messiah. If it does not amount to this idea, the related one of prophecy readily originates: the task of redeeming the world by reason of the supernatural occurrence presumed to be so similar to the passion of Christ. In other cases the fanciful explanation of the akinetic states is especially colored by the memory of visions and vague hallucinations, which have existed during them and usually have an ecstatic, religious purport. It does not need to be especially emphasized, that the state of consciousness at the time of the akinetic states cannot be directly established, but is subsequently to be disclosed by the communications or conduct of the patients. Still so much is certain, that it is a matter of very different states, among which the akinetic phenomena may take a perfectly independent position.

In other cases one hears from the patients, as soon as they have awakened from their motionless state, that they were subjected to the most heterogeneous morbid sensations, pains of unbearable intensity, cessation of the heart's action, suffocation, stagnation of the blood in all the veins, etc. It is then a matter of a state of psychosensorially induced akinesis. Occasionally the patients describe their sensations as a continual death struggle. The hypochondriacal feelings are quite often accompanied by adequate cutaneous sensations and hallucinations of sight, as *e. g.*, the feeling of dying from hemorrhage and the visual hallucination of pools of blood in the bed. These combined hallucinations are, as we shall see later, quite common in all states of blunted sensorium. It is conceivable what a fertile source of explanatory delusions is afforded by one of these periods of suffering. Here the comparisons with the sufferings of Christ or some martyr immediately follow and most commonly the grandiose delusion of being a savior or prophet is associated.

It is not always true psychotic symptoms, which cause explanatory delusions, it may be the normal processes of

the organism, some real functional derangements, which of themselves would be of only slight importance. The intimate relation is here displaced, in so far as the explanatory delusions then have no independent significance, but occur only in conjunction with other delusions already existing, and in a certain measure serve for their elaboration. Of the wholly normal processes sleep is to be mentioned first of all. A profound sleep, which happens at the time new changes in the contents occur, is very often regarded by the patients, that they could have been stupefied to permit such manipulations. The feeling of pregnancy manifesting itself may in part be interpreted in this way, and the counter idea, that a cohabitation has not occurred, may thus be explained. But allopsychical changes in the contents of consciousness also lead to delusional interpretation of sleep: the patient has been stupefied and in this state taken into strange surroundings. It is very similar, when the experiences of a dream are recognized as such, but are still held to be divine inspirations. Of the actual functional derangements, but delusionally interpreted, the disturbances of menstruation and pregnancy deserve special mention, then intercurrent dyspepsias and digestive derangements, as well as the constipation often actually present in the hypochondriacal. You see the tendency once present to systematization of a delusion is abundantly supplied with material for utilization by the normal or approximately normal processes, and that here also the occurrence of explanatory delusions furnishes the means to fill the consciousness with a number of false ideas.

(To be Continued.)

Wernicke

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(CONCLUDED).

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By DR. C. WERNICKE,

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By DR. C. WERNICKE,

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HALLUCINATIONS OF VOCAL SOUNDS OR PHONEMES. DELUSIONS OF RELATIVITY OF AUTOPSYCHICAL, ALLOPSYCHICAL AND SOMATOPSYCHICAL ORIGIN.

XIII.

In the large role, not readily overestimated, which the sense deceptions play in the symptomatology of mental diseases and, as you have seen, in part in the terminated, it will be permitted to take up the theory of sense deceptions first, that which is the most essential for their understanding and clinical valuation. We still hold to the above explained sejunction hypothesis, without thus wishing to claim, that this is the only mode of origin of sense deceptions. On the contrary we will later encounter sense deceptions which very probably owe their origin to a primary stimulation of the projection fields of the sense centres, and will have to admit that the real *causa efficiens* and the point of attack of the stimulus must be sought in the projection fields, no matter whether these are primarily affected by a morbid irritation or first in consequence of a sejunction process and the hypothetically tenable, thus resulting regurgitation of the nerve current from complex

*Translated by Dr. W. Alfred McCorn, Resident Physician "River Crest," Astoria, L. I., New York City.

associative structures. But we may now claim that the sejunction hypothesis is probably accepted for the large *majority* of sense deceptions, which here chiefly occupy us, those of the paranoiac states.

Certain fundamental attributes of hallucinations may be directly derived from our hypothesis. The first of these is the incorrigibility of hallucinations. We see that the reality of a sense deception is adhered to against the evidence of all other senses and that ere the fanciful explanatory attempts are made and the truth of the sense perception is doubted. This phenomenon is perfectly comprehensible, when it is realized, that once the morbid irritation engages the attention, *i. e.* monopolizes the wave crest of the psychophysical movement, which in itself owing to the narrowness of consciousness renders the momentary correction impossible, but besides that the only means which is at command for correction through the other senses, the association with the normal ideas excited by them, or in other words the awakening of remonstrances, is made difficult by sejunction or entirely impracticable.

Exactly the same consideration also explains the cogent character of such hallucinations, which have an imperative or prohibitory purport. Here also the remonstrances are inaccessible through the fact of sejunction, so that the nerve current, confined in a narrow preformed channel, is discharged with elementary force to the motor projection fields. Yet I cannot forego remarking, that the cogent character of this sort of hallucinations is usually overestimated, and that often enough patients are found, who resist the hallucinated demands and even complain about them. So *e. g.* the hallucinated challenge to strike the physician rebounds harmlessly owing to the patient's attachment. But this circumstance may be explained, as very evident, by varying extent of the sejunction.

A second remarkable fact is the predominance of the acoustic hallucinations and those of speech exclusively termed "voices" by the patients, for which owing to their special clinical dignity the special name of *phonemes* is justified. On

the other hand acoustic hallucinations may not occur more frequently than those of the other senses; but that the patients in a large number of cases exclusively hallucinate the vocal sounds, and in all with hallucinations, with few exceptions,* the hallucinated vocal sounds dominate, must be considered one of the most fundamental attributes of sense deceptions and may finally be traced to the mechanism of their origin†. We remember we have evolved the nature of secondary identification in the example of the sensory projection field of speech. The clang image of a word heard does not suffice for its comprehension, but by it first the memorial image constituting the concept must be excited, thus secondary identification occurs, *i. e.* the sense of the word is understood. Although we have generalized this one example, it cannot be misconstrued, that the sensory speech center has especially intimate relations of association to the components of the simplest associative connections, the concrete concepts. It has gone so far as to put clang image and concept on a par. But for a mechanical comprehension of the processes taking place in hallucinations, it must be immediately evident, that with no other sense does there exist such an intimate colligation of some concrete concepts, as with the sensory speech centre. The experiment teaches that the time of a concrete thing which, as we will assume, possesses five different sense qualities, can be immediately found by each of these with exclusion of all the other senses. If we then assume the existence of suitably worn associations between the acoustic speech centre, and each of the five sense projection fields, we will comprehend, that by a central excitation of the concept by arrest of nerve energy the process of excitation encroaches on the sensory projection field, will here be increased five fold and in this way

*These relate to certain toxic psychoses, like delirium potatorum and several others.

†In my opinion there is no occasion to refer the explanation of "hearing voices" to hallucinations of the muscle sense, as Cramer does. The symptom of "thought utterance" (ALIENIST AND NEUROLOGIST, vol. xxi, p. 9) should be restricted as much as possible and understood in the sense that the patients' own thoughts recognized by them as such becomes naudible on definite occasions, as *e. g.* when they read or write. Cramer and his follower have unfortunately carried the symptom so far that it has entirely lost the original value of a elementary symptom and now always needs an explanation according to its mode of origin.

that intensity of morbid irritation gained, which we must demand for the occurrence of a hallucination. Like favorable conditions are again found in no other sensory projection field.

In the psychophysiological introduction you were told that individual variations may be assumed in the respect that, first more the meaning, then more the thought prevails in words, *i. e.*, vocal sounds. Yet I believe I must caution you against assuming that thought only occurs in vocal sounds, as is claimed by many. But if we grant the probability of such an individual difference in thought mechanism, we have the key to the comprehension of an important clinical fact, namely the almost universally recognized experience that one and the same form of disease, *e. g.*, a simple acute depressive psychosis, in which a definite purport of the intellect is correspondingly conditioned, produces in one individual only ideas of this purport, but in another phonemes of like purport. In our example then first exist only ideas of anxiety or ideas of fear, as I call them, another time alarming and threatening phonemes, *i. e.* the same ideas are in a certain measure put into words. But by no means do we meet with this experience only in the acute psychoses, but equally in those of slow, chronic origin and course. The increased nerve energy in individuals disposed to hearing voices, incidentally the largest number, in a certain measure meets with a greater excitability of the sensory speech field and the tracts uniting in it.

In many chronic insane the hallucination of vocal sounds of special form is observed: they believe they hear long conversations. The patients often have a certain fondness for such hallucinations, evidently finding in them the best amusement and occupation. Probably there are always individuals, whose intellectual action habitually happens with the rise of word clang images.

I have repeatedly intimated that the purport of hallucinations is not usually accidental, but dependent on other conditions more or less familiar to us. This is especially true, as was to be expected, of the phonemes. As I have

already mentioned, the ideas of fear, commands and orders, which are usually embodied in "voices," so we will later meet with the grandiose ideas of maniacs and the self-accusations of melancholiacs in the form of sporadic voices. It is very similar with the explanatory delusions of the paranoiac states. They very commonly occur in form of voices and make us understand that the purport of the voices is very often threatening, insulting, thus corresponding to the ideas of persecution, which so often form the contents of the explanatory delusion. No less do we meet phonemes of the purport of grandiose delusions, when the need of explanation has led to the evolution of a consecutive grandiose delusion. The same phenomenon of sense deceptions, which we formerly became acquainted with as a source of the explanatory delusion, meets us here in the entirely different significance, that it puts the explanatory delusion into words and forcibly supports the sense perception. The delusional conception of the world thus gains new roots for its energy. Still the same elementary symptom of the phonemes acts more portentiously in the frequent cases, in which it is not recognized as something strange, requiring explanation and not designated as a "voice," but is projected to persons about. This severe stage of phonemes seems especially to be the expression of the delusion of relativity, of which I will soon speak.

Although this is not the place to go into the theory of sense deceptions fully, I must yet say in anticipation, that we have to think the process of irritation, which here takes place as encroaching on those elements of the sense projection fields, which we have formerly distinguished as perception cells* and belong to the consciousness of the body. Only by the fact that these cells, always belonging to a definite area of surface of the body, are excited, can we explain the chief attributes of hallucinations to be studied later. The distinction then from the true sense perception

*See Alienist and Neurologist, Vol. XX, p. 364.

is limited to the fact, that in this the cause of the irritation lies in the periphery, in hallucinations in central—transcortical—stations, while its real point of attack is the same in both cases. We have seen in the introduction, that all intense sense excitations coming from the periphery are simultaneously accompanied by a tone of feeling, and understood as the sign of an affection of the body.* The movements of defense, which follow the sense irritation accompanied by an intense tone of feeling, we have become acquainted with as a means for protecting the body, which in part indicate a very remote derivation. It is now of great interest to learn, that in the chronic psychoses something very similar occurs, only that the tone of feeling is not thus conditioned by the intensity of the sense irritation—on the contrary it is a matter of the most ordinary sense perceptions and most reliable according to their purport—but very probably forms the element superadded by the mental disease, accessory to the sense perception in itself normal. This tone of feeling of indifferent sense perceptions leads to a falsification of secondary identification in the sense, that under all possible explanations is favored with respect to their own person—Neisser's morbid relation to self—and in this way to the origin of delusions of relativity. The so-called *delusion of relativity* is, somewhat like the delusion of persecution, only a collective name for a copious assortment of delusions, but which are here regularly united to the act of perception and occur with it; it consists in a falsification of the perceptions themselves. Examples may illustrate the symptom. A person on the street finds the doings of others natural and of no importance. But the insane person with the delusion of relativity, observes that persons stop on his account, step aside, make some gestures. If they spit, they do so in front of him, if they speak, they speak about him, if they wait, they wait for him. The person coming wants to meet him, the one behind is following him, accidental glances, the actions of strangers refer to him. Undoubtedly the sense perception is correct,

*See Alienist and Neurologist, Vol. XX., p. 356.

only the relation to themselves, which inseparably adheres to the perception, is morbid, like sense irritations accompanied by intense tone of feeling.

With respect to the explanation of the symptom, we will follow the path which has led us to the comprehension of hallucinations. With these the symptom has evidently a close relationship, and the relation to them may perhaps be expressed: that delusions of relativity depend on an increase of morbid irritation, which acts on the same area as in hallucinations, but does not become as intense as is essential for the production of hallucinations, therefore the symptom is always manifested in connection with true sense perceptions. We will naturally derive the increase of irritation from sejunctive processes of the some locality, but of less intensity than in hallucinations. For such a conception the experiences of the clinic afford us the best proof. In wholly chronic psychoses of an ascending course the first stage usually consists of such a delusion of relativity, it is then followed by a stage of hallucinations and largely of phonemes and it is very characteristic that the purport of the phonemes consists in by far the greater part of delusions of relativity. At any rate the delusions of relativity do not generally cease as soon as phonemes of like purport have been associated, but they usually continue in like intensity. But it now follows that the increase of morbid irritation exists permanently, but the phonemes, which in such cases generally occur only intermittently, require a special augmentation of the quantity of irritation for their manifestation. The residuary hallucinosis* accompanying the delusion of relativity is likewise evidential. Here also the purport of hallucinations of hearing is largely derived from the delusion of relativity, and after the decline of the phoneme the delusion of relativity may continue alone for a time.

The conditions for the occurrence of delusions of relativity are not entirely peculiar to mental diseases alone. Very typical examples may be drawn from normal mental

*See Alien st and Neurologist, Vol. XXI., p. 17.

life. The novice, who appears for the first time in a dress suit and white gloves, may readily believe all eyes are fastened on him, and it is similar with the young man when he enters the ball room for the first time, and therefore behaves so awkwardly. An excellent example of this sort of the delusion of relativity is drawn in a masterly manner by Dostojewski's pen when his hero Raskolnikow, conscious of the murder perpetrated, finally betrays himself by the references to this act, which he finds in unimportant expressions and meetings. When anyone perceives intentional discourtesy in an omitted salutation, it is the rise of a delusion of relativity.

The first cited examples of delusions of physiological relativity—or ideas of relativity, if it is wished to dispense with the term delusion in this connection—show us the self-perception of a change in the personality to be the originating cause; this mode of origin we may distinguish as the *allopsychical* mode of origin of the *delusion of relativity*. It is an emotional state, which seems to be essentially dependent on the fact that the contingent change in the contents of consciousness is felt to be somewhat strange, not belonging to it, is not assimilated, digested (*sit venia verbo*), in a word, that the new experience meets with difficulties in association. The mental condition of a Raskolnikow would be impossible in a brutal habitual criminal. As in these examples taken from the normal, the delusion of autopsychical relativity of the insane also shows the peculiarity, that it is manifested preferably with respect to very definite ideas or groups of ideas. There is then a *delusion of circumscribed relativity* of autopsychical origin. In certain quite frequent cases of chronic mental diseases, one of these delusions of circumscribed relativity besides a definite quantivalent idea form the only two psychotic symptoms decisive for the origin of the mental diseases to which subsequently a long chain of explanatory delusions and analogous secondary symptoms may be added. I will return to these cases later. We meet with an extended delusion of autopsychical relativity, when the patients think the

occurrences of the world, which they see, or spoken sounds, which they hear, relate to their thoughts. Instead of actual sense impressions optical hallucinations or phonemes may be the basis of this delusion, and preferably the explanatory delusion, that their thoughts are uttered, *i. e.* have been heard, without their having been spoken, follows. The patients very readily come to this conception, when the phonemes represent answer to interrogatory thoughts or relate to answers only thought of. According to the statements of good observers, it is unquestionable among the insane that the phenomenon of "thought utterance"* quite often has this origin.

Analogous to the delusion of autopsychical relativity we may then speak of a *delusion of allopsychical relativity*, when the consciousness of the world is proven to be changed. We will take up these cases under the acute psychoses. Another time an allopsychical falsification of consciousness is not directly demonstrable, but the symptom characterized in that the allopsychical mode of origin is not to be doubted. The recently mentioned examples are included here.

We finally properly distinguish a *delusion of somatopsychical relativity*, when unimportant sense perceptions are referred to subjective perceptions of morbid sensations or other changes in the body. The examples here included may in part be also referred to the somatopsychical explanatory delusion, but in part differ from it, when the assumption of a special tone of feeling to the unimportant sense perceptions seems requisite for the comprehension of the accomplishment. A typical example of this has become known to me by an opinion presented for revision, which I will briefly cite to illustrate the symptom. A young man was brought before the court for having made a murderous attack on his father while he was asleep in bed. He frankly admitted being extremely embittered against his father and had intended to actually injure him without murdering him. The cause of his exasperation consisted of the observations,

*See note on page 3.

which he described as follows. It was quite common, while they sat at the table to get into a quarrel, in which the rest of the family had taken first his part, then the father's. It then often happened that his father rapped on the table and he was thus violently excited sexually. Also in the fields, while at work, his father had now and then appeared, and thus excited him sexually. The sight of his father was evidently accompanied by a morbid tone of feeling, which in this case started from definite, but in themselves uncertain morbid bodily sensations. These examples have been well designated reflex hallucinations (Kahlbaum)* and the best known are those in which the insane claimed in the dishing out and division of the soup, they were dished out, in lighting the fire, they were burned, etc. The name seems to me but little adapted, because morbid bodily sensations are states analogous to hallucinations, but yet must be differentiated from them practically.† The delusions of somatopsychical relativity are very frequently found in acute psychoses, but they play a large role in the chronic, be it that they are previously connected with a chronic somato-psychoses, be it that in the subsequent course of a chronic progressive psychosis, somatopsychical symptoms are added or an otherwise stationary state experiences an acute excerbation by the intercurrent appearance of morbid bodily sensations. The so-called *hypochondriacal delusion of persecution*, to which a consecutive grandiose delusion may be subsequently associated, springs from these delusions of somatopsychical relativity. In every insane asylum there is a number of these patients, who by occasional outbreaks of violent curs-ing, disturb the quiet and are proven to be due to delusions of somatopsychical relativity.

**Die Sinnesdelirien. Allg. Zeitsch.* f. Psych. Bd. 23, p. 1—86.

†This same objection may be raised against Cramer's so-called hallucinations of the muscle sense.

XIV.

THE RETROSPECTIVE EXPLANATORY DELUSION. THE FALSIFICATIONS OF MEMORIES.

The sejunction hypothesis evidently shows us the way to acquire a mechanical understanding of the psychotic symptoms. As in brain diseases, it comes to light on deeper penetration into the nature of mental diseases, that the abrogation of function offers us the most valuable means for the understanding, while the processes of morbid irritation underlie the complex conditions and must be considered somewhat dependent on the phenomena of abrogation. We will not be able to too carefully bear in mind the theory of brain pathology in this relation. In the light of our hypothesis, the case, with which I began our clinical demonstration, becomes clear and with the mechanical conception of morbid processes in the organ of consciousness, exclusively composed of nervous elements, appears more consistent.

We had designed to study next the changes of consciousness with respect to contents. As the process, by which they arise, we had designated the acute and chronic mental diseases, and estimated its reciprocal position to the facts of brain pathology. We now believe to know that sejunction or disjointing of association is the chief process in changing the contents of consciousness. We may now define mental disease as the time in which by disease of the nervous parenchyma disjointings of associations occur. Thus the destruction of nerve structures, symptom of abrogation, is put in its proper place, without the possibility of restoration by regeneration, which occurs very frequently in the peripheral nervous system, being anticipated, or by commencing new associations. On the contrary, we will have to consider the curable acute mental diseases as instances of such restoration or re-adjustment. Evidently the disjointing of association under certain circumstances is equal to the destruction of certain psychological unions. So we will subsequently be able to maintain a loss in concepts or, in other words, a reduction of the number of concepts as

a state of defect occurring in consequence of mental diseases.

But we have next to become acquainted with and understand by the sejunction hypothesis other clinical symptoms, which we observe daily in the so-called old cases. To these belong first of all the subsequent correction of the contents of consciousness or the *retrospective explanatory delusion.* In terminated cases, those chronic from the beginning or finally in acute mental diseases, which have reached a chronic stage, we see this process being constantly consummated in the same way. The changed contents of consciousness must be brought into harmony with the old, still unchanged possession, corresponding to our controlling requirement of causality. The more self-possession is again attained or, in the chronic psychoses, retained, the more the intellect acts along the lines of the strict standard of logic, then the more imperative is the necessity of emphatic, decisive arrangement being established in the structures deranged by the disease. In the complex brain mechanism not the remotest corner shall normally exist, which does not functionate under its influence in harmony with the function of all the other parts. An example will best illustrate the process, which then occurs. You remember the patient, a Doctor of Philosophy, whose explanatory delusion was constructed on the theory of suggestion and hypnotism. This patient has passed through an attack of mental disease eight years before, but had so far recovered, that for many years he had perfect appreciation of the symptoms of his acute mental disease. When I recently presented him in a new attack, to my great surprise, the curious phenomenon presented itself, that his appreciation of his illness was entirely lost, so that he now claimed the elementary symptoms of his first sickness, chiefly phonemes, had not been the result of a disease, but the hypnotic influences of some persecutor. But of the circumstance that he had for many years regarded his hallucinations of hearing to be manifestations of disease, he remembered perfectly, but he very correctly remarked, that such a fanciful appreciation of disease could be explained by

the action of suggestion. You perceived from this example, with what readiness opinions, which could have been so firmly held for years, as they were difficultly acquired and the product of a complex intellectual process, can be overthrown by a presumable new insight, but which is morbid. Nevertheless if we, as I do not question, must conceive this process not to be morbid in itself, but merely as the reaction of a normally functionating brain mechanism to the once existing change as to contents, you will not think it strange, if very commonly the defective physical knowledge of the majority of the insane does not hold out in the hallucinations against the evidence of their senses, when the assumption of a supernatural action, subterranean passages, hollow walls, etc., which is made for the explanation of strange subjective sense perceptions, loses the peculiar and grotesque character, which they would have according to the judgment of the same person when well. Previously acquired facts are quite often modified in the way, that hindrances, which heretofore oppose the solution of a problem, *e. g.*, perpetual motion, like the assurance of the constancy of energy, are now null and void, and so are explained many wholly insane inventions and discoveries.

The previous personal experiences generally form the special object of these interpretations. Under the newly acquired, presumably better insight evidences of favor appear like hypocrisy and cunning calculation, hostile acts as deeds of benevolence, non-essential occurrences as extremely important events, an accident as intentional action of some patron or adversary.

This process of subsequent correction attains a special importance, as soon as it is not limited to facts, opinions and complex conclusions, but is extended to the memorial images of previous perceptions and in this way effects a subsequent falsification of secondary identification. This sort of subsequent correction of former memories we will distinguish as *delusion of retrospective relativity*. It is hence a matter of occurrences, which at any rate have analogies in normal mental life. It may happen to anyone, that he first

subsequently believes to remember having met an acquaintance, who was not noticed at the time because he was inwardly occupied. This subsequent identification may be false as well as correct as to its contents, and normally this fact is to be taken into account. Among the insane there are often persons, who are subsequently identified, in whom the most superficial similarities generally suffice for the explanatory requirement. In patients with fixed grandiose delusions these interpretations are observed very frequently, even in the memories of youth. The patient remembers, *e. g.*, when a boy of having been once spoken to by an officer; this officer was, as he has subsequently recognized from the resemblance, Emperor William, Emperor Frederick or some other noble and popular person. At the same time he had been asked by the teacher at school, if he still had a father or grandfather. This question is referred to the same person and should intimate where he is to look for his father or grandfather. The reply, that this might have been an indifferent question, these patients confute by referring to a meaning glance or significant movement of the teacher's hand on this occasion, a clear evidence that the perception has been falsified in the memory. From patients of this category stories for hours are often heard of their youthful remembrances, which in the greatest part are related just as they have been experienced. But the perceptions universally present that coloring, which a distinguished psychiater has aptly described by the words "*tua res agitur.*"

In ignorant and undiscriminating persons, who are not accustomed to separating their subjective impressions from the material of objective perceptions, the delusion of retrospective relativity may readily lead to wholly false representations, and it will often be hard, under these conditions, to ascertain the fact, as it has really happened. Still the clinical requirement demands the accurate differentiation of delusions of retrospective relativity from another elementary symptom, which is observed in the same category of insane, that of the so-called *falsification of memories.* This symp-

tom may occur in two equally significant modifications, a positive and a negative. The positive form of the falsification of memories* is also called *confabulation* and consists in the appearance of remembrances of events and occurrences, which have never happened. If the purport of this confabulation is generally so significantly colored, that it corrresponds to the prevailing delusion, it then affords, *e. g.*, in the cases of fixed grandiose delusion cited† a great part of the evidence, on which the claim of descent from nobility or the relation to such, is based, in cases of systematized delusions of persecution (often directed against one person), it contains the strangest persecutions claimed to have been endured. In other cases the symptom reflects the incoherence of the contents of consciousness (disintegration of the individuality, see above), as in the case of Rother and very frequently also in the fanciful and peculiar narrations of paretics. On the whole an inner connection with the disorders of memory, which is to be presumed *a priori*, is also established by clinical experience, for the symptom belongs to the almost never failing phenomena of the three mental diseases characterized by temporary occurrence of memory defects; hebephrenia, presbyophrenia and progressive paresis.

No less remarkable is the *negative modification of the falsifications of memories*, the occurrence of circumscribed gaps in the otherwise well retained material of memory, without there being an indication, that a clouding of the sensorium or loss of the ability to attend could have existed at the time of the event in question. For the correct conception and description of this symptom the greatest value must be placed on these preliminary conditions. No one will wonder, if a patient with the initial symptoms of typhoid or meningitis has completely lost the remembrance of hours and days, for instance of a journey from Rome to Berlin while in this condition. Just as little do we wonder

†Kraepelin: Ueber Erinnerungsfalschungen, *Arch. f. Psych.*, Bd. 17, p. 830.

*See page 13.

at the complete loss of remembrance in the post-epileptic state, of the fanciful events of delirium tremens, other toxic deliriums, hysterical delirium, a state of profound inebriation or finally of normal trauma. Also for those events of a mental disease, in which at the same time a loss of the ability to attend could be established, the complete extinction of memory thus seems comprehensible. But it is entirely different with the symptom of negative falsification of the memories. Here individual actions and occurrences, which have happened apparently in perfect mental clearness, are effaced from the memory, while events closely related in point of time are accurately remembered. But there are two circumstances, which do not seem to be wanting as characteristic signs of the symptom and might serve to pave the way for its explanation; the occurrence concerned as to the action seems always to happen at the time of intense emotion, and besides it is connected with a definite quantivalent idea, and so that it either appears as their result and so induced or would serve for their invalidation and refutation. The most typical examples have occurred for me in the so-called querulant insanity and related states of chronic partial psychoses. To illustrate what has been said, I could cite the case of a master tradesman, living here, committed, but still busy with his work, who has been proven to have insulted a policeman publicly on the street by indecent words and gestures and afterwards swore he did not do it. This man under the influence of a quantivalent idea, which for a time decided his whole conduct, held the officer to be his personal enemy and spy, for shortly before he had been injured according to this idea, and without doubt at the time of the offense he acted under the influence of an intense emotion. But just as little could a doubt exist from the exact knowledge of the person and the whole affair, that the respectable and religious man was wholly averse to committing a conscious perjury, while he had actually sworn falsely. Of etiological factors merely a marked family tendency to mental disease was to be discovered in the man of middle age.

The last three symptoms mentioned are connected in so far with the subsequent correction of the contents of consciousness as they evidently represent the excess of such a correction, and its morbid excess, while the process of correction in itself could be regarded as normal. All three symptoms evidently belong to each other, and their mutual relation may be expressed, that we subordinate the first to the qualitative falsification of memories, the other two to the quantitative. Instead of the expression positive and negative we might perhaps rather designate the two atter as additive and substractive, so that we would now have the uniform nomenclature to distinguish three forms of falsification of memories, a qualitative, an additive and a substractive.

If we will now undertake to make an explanation, it will be best to treat all *four* symptoms collectively. Next in regard to subsequent correction it would soon occur to you how closely related this symptom is to that of the explanatory delusion so long familiar. Only the subsequent correction perhaps corresponds more to the refined psychological* requirement, while the explanatory delusion to a cruder mechanism. The explanatory delusions are generally obtruded on the consciousness by unconscious process of deduction and therefore with such elementary force, while the subsequent correction occurs slowly, it is a conscious, actual mental operation, which reaches its conclusion after long deliberation, that the patient becomes clear over a number of things, which had prevously seemed incomprehensible. The patient Böhm, whom you remember, was in such a process of clarification and stated, he could not decide at the time which of the various assumptions was correct.

But it shows that the slowness and profoundness of this subsequent correction must lead to an irreparable falsification of the mental possession, so that the disappearance of the elementary symptoms, *e. g.*, the phonemes, which called for the explanatory delusion, the confusion, which has been once caused, cannot be repaired. Explanatory delusion

and subsequent correction are the two fundamentals of this so-called systematization, and therefore it is not strange, if you find the proposition universally accepted, that systematization is equivalent to incurability. Still the proposition in this generality is not correct, and surely not for the majority of those systems in acute mental diseases, which usually depend so largely on explanatory delusions. As we shall see later, there is on the contrary one of the most curable mental diseases, in which temporary systematization is the rule, the acute hallucinosis, and the same seems to be true in the simple acute psychosis of fear.

While for the chronic psychoses the proposition might have unlimited application. But how much more favorable in these are the conditions for subsequent correction in morbid senses! In the acute diseases mentioned there are weeks and months in which an accession of morbid components stream into the consciousness in such abundance, that one displaces the other. The elementary symptoms are afterwards silenced, and what has remained of them, no longer have the power to correct the former mental possession, but rather succumbs to the united force of the again normally functionating process of identification and the previously acquired ideas. While in chronic cases the new acquisition bears very much the stamp of the normal event, so that the old possession should behave toward it differently than to the new normal acquisitions.

As we have seen above, the processes of irritation, which are at the base of the elementary symptoms of the chronic psychoses, may all be regarded as a consequence of sejunction; we will therefore have to consider the explanatory delusion and subsequent correction in the paranoiac states as unavoidable, if also merely direct consequences of sejunctive processes. Whereas the symptom of the delusion of retrospective relativity may be credited and indirect connection with the sejunction. We have seen that we must trace the delusions of relativity chiefly to a process of irritation being manifested in secondary identification. If we have once accepted this view, then there is nothing

against the further assumption that the same quantity of irritation which is associated in the acts of perception with the peripheral excitation of a projection field, may also cause the excitation of memorial images by the way of association and thus delude the relation of their own person. But the accession in the quantity of irritation so required may be due, as we have seen, to the arrest of nerve energy in consequence of sejunction.

That the positive or additive form of the falsification of memories has to presume a prior dissolution of association, needs no further discussion. The stability and reliability of our memories depend in great part on the collegation strictly accomplished between them in point of time, and so we may say that the memories are so closely united by the threads of time that foreign elements find no place between them. This association in point of time then must be broken through, if the pseudo-events of confabulation shall be held to be true. This only is the possibility for the occurrence of the symptom explained, therefore the real mechanism of origin still remains obscure. But the mode of origin and occurrence of the symptom need to be discussed.

The first assumption that it is a matter of memories of the pseudo-events in an acute mental disease, is evidently untenable, for all those confabulations which occur without a preceding acute stage of the disease, and these we here have in mind and might exclude the others from the concept of confabulation. But from whence must these events clearly described in all detail, which have never been experienced, and for anyone versed in the matter the assumption seems wholly excluded,that it is a question of voluntary productions, intentional deceptions or lies in ordinary parlance. The confabulations are not lies, because the patient is fully convinced of their truth. As the contents of this confabulation very often have a fanciful stamp, similar to the events of the dream, I regard it very possible that they are real memories from dreams.

The following might be cited in favor of this possibility. It is occasionally found that the sane person on awaking

from a dream believes for a short time the occurrences during the dream. But that only occurs when the contents of the dream are not too contradictory to the laws of reality, and when they are readily joined to the last events in points of time. The latter condition would be fulfilled, *e. g.*, when in consequence of a mild intoxication the remembrance of the last events of the previous evening is lost or can only be vaguely recalled. The insane patient may be wholly deprived of both these corrections. The continuity of his memories in point of time is neither so stable, that foreign terms could not be inserted, nor are the laws of reality so inviolable for him as for the sane person. It is evidently the fact of sejunction, which removes the hindrances to the reception of dream events into the store of memories. But perhaps something else may be necessary to lead to the occurrence of confabulation, *e. g.*, an abnormal vividness of the dream events. However it would take too long for us to go further into the conditions, which are certainly not inaccessible.

For the negative or subtractive form of the falsification of memories there is a common analogue in the post-hypnotic phenomena. Commands may be given a person hypnotized, which he later performs while awake, without remembering the command. For our consideration the performance of the command is unessential and merely an indication that the consciousness was affected at the time the order was given. Whereas essential for us is the complete absence of memories of the command, while on the other hand the action surely cannot be regarded as really voluntary. As we are compelled to trace this effect of suggestion to the fact that foreign components are implanted in the organ of consciousness, without their entering into association with its other contents, a circumstance which also may seem comprehensible grossly mechanical for the cogent influence of these transplanted components of a foreign consciousness on motility—so we will have to admit for the gaps in memory in this symptom the absence of associative collegations for the explanation

of the circumstance, that real occurrences may not be remembered. Still the close relations which these gaps in memory with respect to contents show to the quantivalent idea, intimate that the associative collegation is not entirely absent, but is only a very biased idea and limited to the quantivalent, otherwise the occurrence of the apparently conscious acts would not be explicable. It is then probably the matter of a limitation of consciousness, as it is known only from states of intense affect. As the actions, which occur during the lapses of memory, often seem due to affects, a factor favorable to subsequent forgetfulness may be perceived. But this factor cannot be exclusively utilized, for otherwise it is inexplicable why only certain kinds of the insane present this symptom.

XV.

REVIEW OF THE ELEMENTARY SYMPTOMS PREVIOUSLY DISCUSSED. THE QUANTIVALENT IDEA.

A review of the elementary symptoms occurring in the paranoiac states permits us to make the following distinctions. We found changes in the contents of consciousness, *i. e.*, delusive ideas and erroneous opinions, with unimpaired action of the consciousness, in so far as it is expressed in formerly retained logic, attention and ability to attend, and finally with the ability of adjustment to surroundings. But the intact possession of the abilities does not prevent the specially dormant contents of consciousness from seeming to fall to pieces in a certain measure, a fact which we indicated as sejunction, *i. e.*, disjointing of the several components. These components were firmly united structures, namely complete experiences, but the sejunction is shown by the fact that the most contradictory of these memories could coexist. The sejunction hypothesis then leads us to the better understanding of certain symptoms of irritation

and thus to symptoms of deranged action of the consciousness, next of the autochthonic ideas and imperative conceptions* then of hallucinations and the delusion of relativity. The explanatory delusions which occupied so much of our discussion, could, as normal manifestations of the action of consciousness, be confronted by the direct psychotic symptoms previously mentioned. As very closely related to the explanatory delusion we have become acquainted with the subsequent correction of the contents of consciousness, the most essential condition for the so-called systematization, and so found a process which is to be attributed to the reactive manifestations of normal action of consciousness toward false intrusions, while we again might perceive psychotic symptoms in the different kinds of falsification of memories, which in themselves morbid, yet seem to have definite, conformable relations to the existing derangements of the contents of consciousness, mostly in such a manner that the range of their occurrence seems dependent on the extent of the change as to contents. In the train of these psychotic symptoms three different modes of origin would have to be differentiated at least, for they appear in part as reaction of a well retained action of consciousness to the change in the contents of consciousness: these include the explanatory delusion and subsequent correction; in part as direct consequences of sejunction; the contradictory contents of consciousness of many old cases, the additive and subtractive form of the falsification of memories; finally as processes of irritation, which are dependent on sejunction; the hallucinations, the delusion of relativity and retrospective relativity, finally the autochthonic ideas.

*Imperative conceptions are very rarely an essential element of the paronoiac states if the cases of inveterate, habitual control of the actions by imperative conceptions are attributed to the limnal states of mental derangement, where they belong in my opinion. Therefore I do not disclaim that between the autochthonic ideas, quantivalent ideas and imperative conceptions transitions exist, in which it is difficult to give the symptom its correct position. But in general the three symptoms may be readily differentiated. When Friedmann: Ueber den Wahn, Wiesboden 1894, recently in his ingenious paper attributed the imperative conceptions to quantivalent ideas and denoted the latter as the chief element in the formation of the delusion, he pays me too much honor and leaves the basis of clinical experience.

The *quantivalent ideas*, which might be repeatedly mentioned, are naturally attached to the last group mentioned, they are apparently closely related to the imperative conceptions and autochthonic ideas, and it is a question, whether they can be separated from these symptoms, and whether a sharp boundary line is possible. The quantivalent ideas are sharply separated from the autochthonic by the fact that they are in no way judged by the patients as foreign intrusions in the consciousness; on the contrary, the patients perceive in them the expression of their most personal nature, and in the struggle for them very truly carry on a conflict for their own personality. Nevertheless they are often felt to be annoying and the patients frequently complain that they can think of nothing else. But they must ever remain far separated from the imperative conceptions, because they are regarded as normal and justified, completely explained by the mode of origin, while the imperative conceptions are recognized as unwarranted and often as directly absurd.

If therefore clinically the differentiation of the symptom from the two others related to it is readily accomplished, its mode of origin is still unexplained. In this respect it is to be remarked, that in general we may define the quantivalent ideas as memories of some especially emotional event or a whole series of such connected events. Thus for instance were the following occurrences, which lead to the origin of quantivalent ideas; the discovery of a man who has undertaken the administration of an estate and had shared as an heir, that he had been essentially wronged in the division; the report of the suicide of a dear friend, the death of the husband, the perception of an old maid that a gentleman pays her attentions, the observation of a wife, that her husband takes a great deal of snuff in spite of her opposition; finally, one of the most common cases, the condemnation or decision of superiors, which is felt to be unjust. The emotion thus arising therefore bears a very different stamp and may either be designated more as anger or vexation, more as sorrow or disgust or sexual excitement.

At any rate you infer from this enumeration, that almost every event may lead to the origin of a quantivalent idea, that it does not at all depend on the kind of emotion, and there must be quantivalent ideas which belong wholly to the norm, but nevertheless the individual's mode of action may be so designed that it has a morbid stamp. Who, after the loss of his property, after condemnation to disgraceful punishment, after the death of a dear friend, takes his own life, surely acts under the influence of a quantivalent idea, and we will have to designate the mode of action as abnormal, although it is not to be traced to a mental disease. It may then have to be ascertained in any individual case whether a morbid quantivalent idea or one within the domains of health exists. You will be inclined to rest the decision of this question on the fact, whether the motive is sufficient or not for the dominating emotion inherent in the remembrance. But this criterion fails us completely, as the example of the querulant proves; a part of these patients had actually been wrongfully condemned and had every reason to revolt. More reliable is the criterion, that in the cases with morbid quantivalent idea, this symptom is not alone, but a series of other psychotic symptoms is soon added. So especially is the delusion of circumscribed relativity characteristic of these cases.*

The following is a typical example of morbid quantivalent idea. A gentleman 61 years of age, who was recently presented to you, gives as the reason for his admission "the annoyances," to which he has been subjected outside of the asylum. In the asylum he is entirely free from them and feels so well that he has been here four years and expects to remain. Several attempts to discharge him have been a failure, because the same annoyances have led to the intervention of the police and his return. Originally it was a certain man, only known to him by name, who resided in the vicinity and whom he therefore met frequently on the street. He noticed how

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*See page 10.

this gentleman stopped and waited for him, but acted as though he counted the windows of a house. He therefore went to the other side of the street, but the next time observed how this gentleman spoke to an acquaintance at the same place and about him, as he is convinced, although he could not hear it. He consequently passed close to the two gentlemen and said: "Perhaps you want something of me?" He then went to his residence and noticed that the gentlemen followed him and stopped before his house. Arrived at his residence, he went to a window, flourished his cane and exclaimed: "Come in here, I will be at your service." A similar meeting another time resulted that the gentlemen actually followed him home, ascertained his name and made a complaint to the police. That was the circumstance that led to the patient's first admission. I presented him in the clinic then, ascertained that the patient's delusion of relativity was exclusively directed against the person of one of these gentlemen, a contractor, and then asked the patient: "But why should this gentleman annoy you?" The answer was extremely characteristic. He could only think of the following. He knows the brother of this gentleman very well, who, like himself, had been a regular customer of a wine merchant six years ago. The patient for a year had been interested in the merchant's daughter and proposed to her, but broke off the engagement because he learned that her father was in a poor financial condition. The contractor had probably said to the other gentleman: "There goes the rascal who jilted the girl." The most careful examination and observation of the patient did not reveal any psychotic symptoms, other than that he claimed his perceptions were correct. He was therefore discharged at his request after a few weeks, but was soon readmitted and this happened a second time. Since then he will not try it again. The annoyances to which the patient was subjected outside, were both times far more numerous than before, other persons and the police had taken part, but it was all traced back to the one contractor, who in the meantime had told

the old story to others and instigated the police to watch him for insanity. In the asylum never an indication of a delusion of relativity or other signs of a mental disease has been observed in the patient.

In this typical case of *circumscribed autopsychosis* we see the quantivalent idea combined with a wholly circumscribed, but later broadened delusion of relativity, which in the asylum where the patient only meets strangers, is never manifested. The basis of the quantivalent idea is the contrast, which the not perfectly honorable mode of action described forms with the patient's otherwise upright character. It is to be assumed that the patient at the time of the first meeting described was thinking of his former experience and felt it to be a stain on him. A glance that he caught, the waiting attitude of the man who could know about the matter, then led to the permanent association with the temporary dominating train of thought, not falsified as to its contents, but as to its value, a very similar act to falsified secondary identification, as was at the foundation of the delusional formation in the young assailant previously described.* As you recollect, exactly the same happens in the delusions of physiological relativity, as it is so aptly described in Raskolniknow. But it is not an accident, that Dostojewski's hero is previously depicted as a person morbidly nervous and of the weakest, most sympathetic spirit; under these circumstances, the remembrance of the murder perpetrated must remain an unassimiliable novum in the consciousness, so to speak, and so we found in all cases of delusion of autopsychical relativity the difficulty of association with the old contents of consciousness to be the basis of the quantivalent idea.

To follow the indications of the preceding case we will reach the proposition, that such events especially will lead to the origin of a quantivalent idea, which from their contents are very hard to assimilate, *i. e.*, to be made consistent with the present contents. As such events may happen, to the soundest mind, we will have to demand special conditions,

*On page 10.

by which the quantivalence is shown to be of a morbid character. Normally there are remonstrances, which gradually lead to a correction of the quantivalence. In morbid quantivalence these remonstrances prove to be inaccessible, and likewise the clinical sign of the delusion of relativity occurs, corresponding wholly to the hypothesis of irritation previously found joined to the sejunction process.

If we will pursue the clinical signs farther, it will be proven that the perniciousness, which is due to this symptom, is well known and must be sought in the extremely intense emotion, which accompanied a certain event. As such a known cause is not to be ascertained for other psychotic symptoms, this serves to characterize the morbid quantivalent idea.

As in the case described, so also in a series of similar cases, a stable, tolerably permanent disease type is shown, which gains its partiality from the traditional name of *fixed idea*. Still in the most of the cases explanatory delusions are added which may ever increase in extent. Subsequent correction of the contents of consciousness and the different forms of the falsification of memories may also be added, and thus a firm delusional system arises, whose complex contents do not at all correspond to the relatively simple and often very insignificant causes of origin and is apt to conceal and mask them. In old cases it is easy to ascertain these delusional structures, but we are often limited to conjecture with respect to the real fundamental quantivalent idea and the events from which it started. It is comprehensible that recovery is out of the question in all cases of this kind, as in all other cases of extensive systematization. While if the extent of the diseases is limited to the first psychotic elements, recovery is possible by the gradual occurrence of vigorous remonstrances. Two cases, in which recovery has occurred were typical types of the so-called querulous insanity.* The clinical presentation of such

*One of them was refused restoration to citizenship by the experts, because querulous insanity is known to be incurable! Yet the patient's conduct showed that he had actually recovered.

patients had often proven beneficial as well as the commitment in itself, the consciousness of being considered insane and permanently under guardianship, are vigorous and helpful remonstrances. The recovery is always very gradual by the avoidance of the causes for revival of the affect, the affect gradually disappears.

It would take too long for me to cite here all the details of the quantivalent idea, nevertheless I would not be able to be exhaustive, for naturally there must be, according to contents, almost infinite varieties of this well characterized form of chronic autopsychosis. For practical reasons I will only permit myself to hint that the possibility of acquiring an accident annuity may readily become a quantivalent idea. Finally I will not omit stating that like almost every other psychotic symptom, the quantivalent idea may form the initial stage of a progressive acute or subacute psychosis including progressive paresis, and that it is a symptom rarely absent in melancholia.

In concluding this discourse, I will report a case progressing to systematization. A maiden lady about forty years old, teacher of physics in a young ladies' seminary, very capable, zealous and greatly interested in her work, believed to observe that one of her unmarried male associates, with whom she had been on friendly terms for years, had earnest intentions with respect to her. She noticed that he often stood by a window while teaching, where he could look into her class-room, that at recess he frequently stood in the corridor, through which she must pass with her scholars to her class, that he saluted her very deferentially. This perception which she found confirmed by various accidental meetings, caused her great emotion, she spent hours and nights in inward struggle as to how she should act, and especially how to behave the most inconspicuously, so that the scholars and her associates did not notice it. As she believed she was no longer a master of her feelings, she tried to avoid these meetings, and even went so far as to intentionally cut him. About this time,

she observed that her pupils seemed to know of it, remarks were noticed, which related to the matter, perhaps sporadic phonemes also occurred, for she heard: "How troubled he looks." Associates, who formerly had been rather distant, now visited her oftener and very frequently spoke of the young man, while her real friends withdrew and appeared to disapprove of her "affair." Even the director interfered, in that during the recess he talked to the teacher and kept him at another place, farther from her, than he generally occupied. After some time this teacher left the school to study abroad. On his farewell visit he was extremely confused, changed color, and particularly a long look betrayed to her, that he well knew how she felt and reciprocated her affection. After he had gone, she observed that part of her associates were scornful and malicious toward her, a part sympathetic and considerate, at any rate their relations were generally known and any mention of this teacher contained allusions to them. The director must have made the matter the subject of a discussion in the conference; she could perceive it from the manner of all those present when she came in. All these events took two years. Direct reports did not come to her from the teacher, and she began to doubt if he was an honorable man. She must admit that her behavior toward him had been reserved, but she still believed he should have declared himself, like an honorable man. Completely engrossed in the sacrifice she had made by her conduct for the sake of the discipline of the school, she once had a passionate scene with the director, whose rude meddling she had not forgotten, and was given a six months' leave of absence, with the advice to go to a sanitarium. The superintendent of the institution to which she went, found delusions of grandeur and persecution and pronounced her incurably insane. When I saw the patient three years after the beginning of her illness, she was the guest of friends and occupied herself in teaching the children. Neither in her manner nor in her talk was there anything peculiar, so the report that she had been pronounced incurably insane by the superintendent of

the institution, must of course excite surprise, therefore the patient was led to seek my advice. I found her an educated refined lady, who was also perfectly clear, that she had the right to arrange her relations to the young man according to her own discretion, but her sense of duty to the school had left her no choice, "she had sacrificed her right to her duty." She had no doubt of the young man having intended to propose. Still she must admit that he had never said a word that could not be interpreted indifferently. If he had not declared himself, what she considered not quite fair on his part, this was principally due to the intrigues and rude interference of the directors and teachers. She did not believe my assurances, that all her fancied perceptions were to be explained by a morbid biased opinion and depended on delusions, yet she was induced to go to a sanitarium voluntarily, where she remained however only a few weeks. I now learn two years later, that the patient has resumed her calling in a private school and is perfectly capable, but in the meantime she has fallen out completely with all her relatives and blames them in part that she has been robbed of her life's happiness. Explanatory delusions and falsification of memories may have been the components of her now completed system.

I cannot help adding a brief remark. If instead of a delicate and educated lady it had been a matter of a somewhat indiscreet person, she would certainly have energetically asserted her claims to the teacher and been a typical example of the persecuted persecutor, so much talked of recently.* In my opinion the most of the cases are to be traced to some morbid quantivalent idea, only that this peculiar basis of the system often remained hidden to the biased observers.† Also the superintendent, whose opinion had produced the lady's not wholly unjustified indignation,

*Magnan, Psychiatric Vorlesungen. German by Möbius Leipzig, 1891.

†In these cases the prejudices relate to the partiality of the disease claimed by me and often misunderstood. As to the sense in which I comprehend this partiality is very evident by this representation, so that I may well refrain from a detailed refutation of the attacks recently directed against me by Hitzig: Ueber den Quärlantenwahnsinn. Leipzig, 1895.

only saw the surface of the matter and has no presentiment of the real nature of the disease.

A psychopathic foundation, from which the quantivalent idea might have arisen, does not exist in the lady. But it will not be wrong to consider her "critical" age, combined with an excess of mental efforts and the thus induced improper mode of life, to be ample ground for the occurrence of a sexually colored quantivalent idea.

XVI.

When is a Mental Disease Terminated?

The question whether and when a psychosis, which has not recovered, is to be considered terminated, is, after all that we know at present, one of the hardest that can be asked, and still in like manner of theoretical as well as of practical significance. Theoretically its importance is evident from the fact, that in the autopsy of terminated cases, we will expect to find only the residues of morbid changes in the organ of association,* no longer the changes themselves. Practically the real terminated cases could be compared to recoveries with defect in other pathological provinces. Nothing stands in the way of the discharge of certain cases from the asylum, as soon as the change in the contents of consciousness is of a harmless nature, as *e. g.*, is so often met with in the fancied inventors and founders of new views of life. The points, which we have for the judgment of this question, are of course to be sought exclusively in the province of symptomatology. Our task then consists in examining the psychotic symptoms we have become acquainted with from the point of view, whether and in how far they are the expression of a disease process still active.

Of greater importance owing to their paramount signif-

*I. e., proliferations of neuroglia. Of epochal importance in this respect seems to me the work of C. Weigert: Beiträge zur Kenntniss der menschlichen Neuroglia, Frankfort of M. 1895. We may hope that a pathological anatomy of the psychoses will be erected by him.

icance in almost all paranoiac states, will this be especially true of the explanatory delusions. These often actually represent an endless series, in that one may always be produced by the other, and so the process of delusion formation goes on indefinitely. While in other cases we see the same change as to contents continue and an explanatory delusion follow only by intimation. An obvious difference is certainly to be maintained in this diverse mode of reaction; only the question is, whether it is due to real pathological conditions. I have above intimated, that an energetic reaction to the once instituted change in the contents of consciousness is to be considered in itself a normal action, and that then the explanatory delusion as well as the intrinsically related process of subsequent correction of the contents of consciousness, may not depend on pathological processes. This subsequent correction always presumes that the alteration of consciousness, as to contents, remains of dominating interest to the patient.

The simplest example, which is here offered is the delusion of a patient failing to appreciate his disease, that at the time of his illness he has been wrongfully imprisoned and robbed of his freedom. We may assume, that such a patient in resuming regular work and returning to settled conditions meets with so many other normal interests, that he must have an especially unfortunate temperament if his chief interest continues engaged with his fancied wrong. But if we assume a jurist, impregnated with the idea of justice could have met with this fate: then the dominant interest devoted to the wrong done him and thus the acquirement of new explanatory delusions, would be comprehensible. He will make charges and institute claims for damages. But "what happens to the one, happens to the others," then nothing is more evident than the thought that the same injustice has happened to others also. If he is now dismissed with his complaints, he perhaps believes that it is not only due himself, but also his fellow-sufferers, that he press his claim further. The repeated adverse decree shatters his faith in the administration of justice, he

comes to the suspicion that the judges are bribed, perhaps by those who originally had an interest in putting him in the insane asylum, or that justice is warped to hush up the probable blunder on the part of the asylum. This special experience is also generalized. All legal processes he now considers from this point of view and so constantly forms false opinions. He may make the readily possible assumption, that the wife has caused the commitment to the asylum. In the asylum he fancies she has taken up with another, who has fought and crushed him for the time being. But now outside of the asylum, the suspicion again arises, he begins to watch all his wife's movements from this point of view, notices things he had never considered before, gives expressions a false interpretation, etc. If, in consequence of this, the affects normally to be expected occur, morbid jealousy arises, the insane jealousy, with all the conflicts, which finally terminate in the patient's recommitment. In all these affairs and calamities he will misjudge according to his biased point of view his relations to other persons and the regulations of society, whether they uphold him or the opposite side. So we see a whole chain of false opinions formed, pure delusions, each succeeding link the logical sequence of the preceding, and any station of the whole road may be the starting point of quarrels, affronts and violence. In fact there is no accounting for the actions of these uncured insane.

We will now investigate what the conditions are, which in spite of the mental disease being really passed, induce such an incurable termination. That the real individuality plays a great role, has already been hinted at. Also the importance of a suitable occupation I have emphasized, for it may divert the patient's interest largely into normal paths. But of still greater significance will be the surroundings and social medium, in which the patient is thrown. If he is associated with imprudent people, who believe his false conception of the past and confirm him in it, if he becomes engrossed in the equally imprudent newspaper accounts of his companions in fate, he is again excited and will

scarcely escape a renewed formation of delusions, while every day, every week, which elapses after his discharge, without the patient asserting his fancied claims and thinking of them, is a great gain for him and favors the fading of this range of interests false as to contents. So an affective conative state must be regarded as the most common preliminary condition of the explanatory delusion. The patients gradually and in favorable cases observe, that the revival of the time of their illness acts on them unfavorably, and I can show you many patients of the kind now actively engaged and self-sustaining, who speak of their illness very reluctantly, and this puts many obstacles in the way of a medical examination. From this consideration it practically follows, that we cannot be too circumspect in the discharge of improved insane, while on the other hand, as a means of strengthening the patients' normal interests by an independent, busy life and thus afford the possibility of further restitution later, it cannot be withheld. Again unfortunately it will often be unavoidable, that the patients are discharged without entering into regular work and settled social relations; under these conditions then, which are not only pernicious by the absence of normal interests, but must even dispose to the origin of depressing effects. The dominating interests may then continue to be engaged in the injustice suffered, an affective state occur and the further formation of delusions is not lacking. So we see individual relations may decide the termination, another evidence of the correctness of our view, that the formation of explanatory delusions may not depend on an existing disease process. A further evidence lies in the fact, that in certain acute diseases the absence of explanatory delusions is characteristic and accompanied by a pronounced defect, an apparent negation of intellectual action. In these cases the formation of delusions does not occur, because the normal elaboration of the changes in contents by the mechanism of association is lacking.

Wholly different than with the explanatory delusions is it with the majority of the other symptoms familiar to you.

Here as the chief means of systematization are to be considered the additive and subtractive falsification of the memories and the delusion of retrospective relativity. They seem then only to make their appearance, as has been shown, when the extremely firm structure of association is loosened by sejunctive processes. But also in the presence of this preliminary condition, the same symptoms may be absent, without a real state of defect affording the explanation, so we are still led to the assumption, that these symptions so essential for the construction of a delusion system must have another basis of origin. The next assumption is, that not the past sejunction, but that still present, then the disease process still active, is essential. At least this view is the most probable for the three other symptoms: the autochthonic ideas, hallucinations and delusions of relativity, of course with a certain qualification.

I then remind you that in residuary hallucinosis, we have made the acquaintance of a stage of disease, which with the attending delusion of relativity of its time, we have essentially considered as a sequence of terminated sejunctive processes. The representation is perhaps to be modified somewhat in the fact that it corresponds to a stage of decline, of the remission of the sejunctive processes to a stage then, in which the most acute sejunctive processes and thus all other severe symptoms of an acute psychosis have disappeared, on account of which the aforesaid elementary symptoms may stand preeminent in their whole clearness. It was assumed above, that a habit could occur for the excitation by regurgitation of the nerve current, and thus these symptoms become habitual, while the pathological process might cease. Evidently this assumption would only apply to those cases, in which phonemes and delusions of relativity had existed very long, also at the time of the acute stage of the disease, and for such cases the possibility will have to be admitted, that in a certain measure they are perpetuated as purely function derangements. Without mentioning this consideration, it will always be justified at least to perceive in these symptoms

the signs of a still existing disease process, if under certain circumstances comprehended in the decline.

The occurrence of the delusion of circumscribed relativity, as we have made its acquaintance on page 298, forms a second assumption. In the wholly stable condition, which these patients present, and from the appearance of delusions of relativity only in very definite situations or at the sight of certain persons, we will have to consider the delusions of relativity as something fixed, habitual, then merely as the result of a fundamental change. The reflection is immediately forced upon us, that these delusions of relativity are nothing new as to contents, then do not really represent an elaboration of the delusion. And if we apply the same criterion to the habitual phonemes and the delusion of relativity in the aforesaid cases, we may be able to expect, that they are characteristic as to contents and in the way, that they may be regarded as the expression of existing delusion, but do not lead to their elaboration or association of new delusions. In fact there are cases of this kind, in which, in spite of the continuance of hallucinations and delusions of relativity, a real systematization will never occur.

In the affect generally a sign will be possessed, whether the hallucinations and delusions of relativity run in habitual channels or contain a novum. The fading of the affect is therefore often of favorable significance, for it proclaims an abatement of the hallucinations and the delusions of relativity and then their gradual cessation. An inner connection between the affect and the occurrence of these active psychotic symptoms cannot be mistaken; for affects, which according to their mode of origin must be designated as normal, often form evidently the exciting cause for the sporadic occurrence of phonemes annd delusions of relativity in otherwise wholly stable states. We have made the acquaintance of an example in the rare case of the occurrence of sporadic phonemes in querulants. That is the reason why patients with sejunctive processes of only limited extent are often doomed to live in the asylum after their

relative recovery. Every attempt to take up the hard struggle for existence results in a return of the psychotic symptoms and only a well conducted asylum offers the patients constant consideration and kind treatment, but also the freedom from material want, which for these patients forms the preliminary condition of their permanent psychical equilibrium.

The proposition may be advanced in general, that a fine gauge of the more or less robust constitution of a brain is to be found in its ability to resist affects of especially depressing sort. Apparently able men, who have never passed through a mental disease, are occasionally seen to shun with nervous timidity the occasions of intense affects, which are unavoidable in psychical elaboration of annoying occurrences. On the other hand nothing is more evident to me of the partiality of the derangement and the normal condition of the brain, contrary to the claimed degeneration, than the exalted disposition and enjoyment of contest, with which many querulants carry their struggle for right to the limit, in spite of all disappointments and adversities.

As the chief guide, that the disease process has actually terminated, we next have to consider the experiment, whether the return to civil life is successful. Therefore this experiment should be made when possible, and it is the duty of the asylum to provide an active and freer life for those invalids who cannot live otherwise. A second test is equally important, but occasionally out of the question in some cases. It consists in the state of the general health. Its grossest expression is the maintenance of a relatively high weight. Derangements of sleep and appetite are thus excluded. The great influence exercised on nutrition by the brain, which is hardly credited by the laity, will be encountered especially in the acute psychoses. But it is shown in the chronic psychoses and principally in the paranoiac states, that any acute excerbation and all morbid affective states are accompanied by loss of weight, which can only be explained by specific trophic influences and is often in striking contrast to the apparently unaltered balance between

imports and exports. Experiments in metabolism here offer a grateful task which would undoubtedly lead to interesting and instructive results.

XVII.

COURSE OF THE CHRONIC PSYCHOSES. ETIOLOGICAL CLASSIFICATION. GRIESINGER'S PRIMORDIAL DELIRIUM.

The summary knowledge of the paranoiac states we have now acquired, does not of course complete the matter, for you have only become acquainted with certain dominant symptoms, while a large number of others, which may occur intercurrently, will first be met with in the acute psychoses. However you will be able to discover the chief traits of the great majority of paranoiac states, and so satisfy the requirement, which, for instance, must be coincident with any psychiatric opinion, namely that the psychiatric symptoms, which constitute the mental derangement of a certain case, are to be accurately enumerated in detail, a requirement unfortunately not often complied with in the opinions of so-called authorities. I cannot sufficiently impress the fact upon you, that you only have the right to declare a person insane when you can prove it by the establishment of certain psychotic symptoms: thus only will you be spared the humiliation of having your opinion subjected to justified criticism by the laity. The "general impression," on which even well known representatives of our specialty occasionally depend, when unable to elicit definite psychotic symptoms, is a mere phrase and must rouse the greatest mistrust, if the diagnosis of a paranoiac state is to be established. The sharpest rebuke is deserved when in cases of the kind, it is claimed it is a matter of a well-known and relatively simple morbid state, to which the name simple chronic paranoia is applicable. Judges, like laymen, may then readily gain the impression of intentional deception and so the standing of all alienists

is damaged. To avoid such blunders it must be considered, that the most evident egotism is far from being a delusion of grandeur, while mistrust, suspicion and hatred of one or several persons is not a delusion of persecution, or that the paranoiac states are mental derangements relatively easy of demonstration by very definite psychotic symptoms.

In some of our most familiar text books you find paranoia divided into simple, chronic and hallucinatory. How far, or rather how little, such a distinction is justified may be inferred from my descriptions. An independent significance does not fall to the lot of hallucination, at least of the almost ever dominating phonemes.

A certain apology is perhaps required, for my having chosen the term paranoiac states to designate all chronic mental derangements with marked change in the contents of consciousness. It might at least be desirable that I attempt to clearly outline the seemingly well known simple chronic paranoia. I purposely refrain from such an attempt, for, in my opinion, there is no well known disease of the sort, if the name is not monopolized for a very small number of cases. I will soon take these up again.*

With respect to these paranoiac states, the defectiveness of our knowledge is especially manifest, when we attempt to classify them according to their development and subsequent course. Only certain borderland cases are well known to us. I will briefly recapitulate them according to the data I have so often alluded to. Among the residuary mental derangements there are a certain number, which we have become acquainted with as stable conditions, generally characterized by slight dissemination of the symptoms and integrity of the other functions. Then there are a number of cases far better known, characterized by a very gradual, insidious development and equally slow uniform course, in which true acute paroxysms or marked excerbations never occur. For both types of disease, as for all changes as to contents, a disease curve may be constructed which corresponds to the extent of the disease state. The form of the

*See page 40.

curve in the first would run parallel to the axis of the absciss, in the second rise uniformly and slowly from the axis of the absciss.

A few remarks are to be devoted to these latter states of extremely chronic course. They correspond to the somewhat common type of delusions of persecution of slow origin, to which after a long time a consecutive delusion of grandeur may be added. The period of slow and imperceptible development of these cases, owing to which it is often very hard to determine the exact time they begin, is characterized by the occurrence of delusions of relativity and then sporadic phonemes of like purport. A quantivalent idea may be the first symptom to appear and determine the trend of the delusion of relativity. Phonemes gradually become prevalent, and hallucinations of other senses and abnormal sensations are associated. The delusion of persecution is then systematized in two ways. First by explanatory delusions, which are related to the fact of the hallucinations: the so-called delusion of physical persecution; then by those, which refer to the author and motive of the persecution. The delusion of grandeur is usually attached to the last series of explanatory delusions, owing to the logical necessity of explaining the display of such large force, the demand for so many men. With well retained self-possession and formal action of thought, technical expressions of more or less peculiar sort are finally formed, often first arising as phonemes, which induce the patients to coin words. These patients' mode of expression thus becomes extremely characteristic. Owing to their well functionating logical apparatus, the whole conception of the world is gradually transformed, and, according to the individual's mental possession, philosophical systems of more or less peculiar construction may be formulated. Formally correct logic and unmistakable mental fertility are retained to the last. In the philosophical literature of the last century a work of several volumes by a scholar, evidently insane, may have astonished you and led you to shake your head. The final result of the whole disease process is a change in the

contents of all three parts of consciousness, for the change in their own body sooner or later attracts the patient's attention; were a name to be chosen for these cases, it would be a matter of a chronic total psychosis, in the later stages at least. But just as unquestionably the initial symptoms exclusively, and largely the whole first period of the disease is to be sought in the allopsychical part. The delusion of relativity, alone demonstrable for a long time, has the above described allopsychical character, the hallucinations with the following explanatory delusions effect a gradual, but steady new interpretation of the world, and so for these first years of the disease the designation chronic progressive allopsychosis is proper or chronic hallucinosis. The epithet progressive amply implies, that the psychosis finally becomes total, as it involves the autopsychical part from the time of the delusion of grandeur. It further seems to be characteristic of these cases, that serious motor symptoms never occur. If relatively frequent* still the absolute number of these cases of purely chronic progressive course is small. It is these, which most correspond to seemingly so frequent and common chronic paranoia. The two female patients Schmidt and Reising are examples, the latter also had a quantivalent idea from the first.

A third kind of course of the paranoiac states has become familiar to me by a number of cases. It develops in the special way, that it represents a continuation of an attack of acute psychosis, after several attacks of the same have occurred in former years and terminated in complete recovery. I have observed this course to follow acute hallucinosis or acute hallucinatory allopsychosis, and generally in alcoholics. The progression of the chronic state, which as to contents always occurs as a delusion of physical persecution seems to be far more rapid and deleterious, than that of the preceding chronic form.

A fourth kind of course of the paranoiac states I can only speak of here in anticipation. In the acute psychoses we will become acquainted with the depressive state of

*See ALIENIST AND NEUROLOGIST, vol. xx, p. 564.

melancholia, an acute general disease, which is characterized by the complex affect and the general akinesis intrapsychically conditioned. Such a melancholic state may simulate a true melancholia for a long time, until the altered conduct of the patient shows that the intrapsychical derangement of function abates and simultaneously delusions of relativity and corresponding phonemes have made their appearance. It is usually an outbreak of anger, which causes the patient to talk, and now in an instant a picture wholly changed is revealed. The paranoiac state, now evident, is usually equally composed of delusions of persecution and grandeur, outbreaks of violent cursing and tendency to deeds of violence accompany it in almost characteristic manner, and a falsification of the contents of consciousness, even to their confusion, occurs quite quickly. The patients seem to be able to tarry for a long time in this stage of confusion as to contents, with lowered energy in their actions, but without real dementia. I am not clear as to the final termination. Not to be misconstrued, I will remark, that the confusion as to contents does not occur in this kind of course alone, but represents the sequel of any extensive falsification of consciousness. The patients finally use a train of concepts, which are peculiar to them individually, so that they become incomprehensible to other individuals and other individuals are misunderstood. The confusion as to contents is only apparent and would not be noticed by another individual with exactly the same falsification of the consciousness.

Undoubtedly it will be possible later to determine a series of well characterized types of course among the paranoiac states, other than the four mentioned, but at present I must be satisfied with these allusions and limit myself to the problem here awaiting us. It will consist in ascertaining the laws governing the several psychotic symptoms and the changes as to contents; the combination of the symptoms cannot be mere accident, any more than that in general nervous diseases definite, well characterized groupings of the symptoms are so common. In the latter the reason is evident, owing to the definite arrangement of

the nerve tracts in definite areas. If I now remind you, that in a certain sense we might consider the changes in the contents of consciousness as focal symptoms, we may apply this consideration to them and regard certain groups of symptoms as the expression of definite anatomical arrangements in the association tracts. At present, as stated, we are only on the threshold of our knowledge, and I ought to warn you especially of regarding the types of course above outlined as the ones particularly frequent. In fact they form only a fraction of the many varieties of unknown kind, which are contained in the very numerous paranoiac states.

It may perhaps seem strange to you, that in the task of arranging the protean paranoiac states, I seem to disregard the etiological principle of classification. If I really did, I would be on the wrong track; but you will observe that I have expressly mentioned the etiology of alcoholism in the psychoses beginning in paroxysms and of progressive course and with the delusion of physical persecution. In fact the question of etiology forms the second equally important problem to be solved. But it would be amiss to talk about lead palsy ere its most common type, bilateral radial paralysis, had become familiar, so also would it be wrong to base the classification of the psychoses wholly on their etiology. Its bias can be shown by the fact, that the acute hallucinosis of the dipsomaniac also occurs in those who do not drink. We now hold that the psychoses are brain disease, and may presume that one and the same focus always produces the same symptoms. A province accessible of investigation is thus offered. Still we cannot expect from definite causative agents, that they will always be manifested at the same focus, any more than that a cerebral hemorrhage is always located at the same place in the brain. The etiological factor therefore will always have to be secondary in the question under consideration. At the same time I am well aware that, under certain circumstances, the locality affected may be ascertained by the etiology, of which the lead palsy above referred to, as also

the disease of the posterior columns from alcoholism and syphilis, finally the most common type of progressive paresis are examples. In the acute hallucinosis of the dipsomaniac, in hebephrenia and presbyophrenia we will later become acquainted with psychoses, in which it is very similar. But in general it cannot be too strongly emphasized, that our best principle of classification must be that of the anatomical arrangement, in other words, that of the natural grouping and sequence of the changes with respect to contents.

At present I must be satisfied to define my standpoint in these important questions, but reserve the privilege of returning to them more fully later, for the acute psychoses unconditionally demands a definite attitude toward these questions. But a brief mention of this point was not to be avoided; the chronic psychoses are largely the terminations of acute psychoses. But then in the face of certain statements of current literature it seems demanded of me not to simply keep silent as to these tendencies.* The writings of a prominent French psychiater, Magnan, have turned the vascillating public opinion in this direction in Germany. You would therefore readily get the impression, that a new, better name had been discovered for a number of generally known clinical facts, and there are really only two large groups of diseases to be differentiated in the province of chronic mental derangements; those of degenerates on one hand and a mental disease not etiologically characteristic, but well pronounced clinically, which the French author terms "Délire chronique à evolution systématique," or "Paranoia completa" by the German translator. As you see, I must contest such a classification on principle, for it practically amounts to the same thing as opposing to all the other mental diseases a form of chronic mental derangement, presumably well known clinically, and recognizing for the former only one etiology, that of so-called degeneration.

*I am greatly pleased to say that in my critical review of Magnan's theory I encounter Hitzig. But still I believe I perceive a satisfactory agreement in the fundamental views he advances in his excellent book on querulous insanity, in spite of all his polemics against me.

In my opinion we are here confronted by the same extravagance as has frustrated every previous attempt to classify the psychoses. This standard type of an entirely chronic paranoia is carried much too far, as I think, and embraces a large number of psychoses differing from each other and yet to be differentiated. And only thus could the author have arrived at the idea of contrasting it with the whole large province of psychoses occurring in "degenerates." With respect to these latter cases, I do not doubt that this etiological point of view will prove just as useful as many others; but it has been greatly over-rated by Magnan, yet I believe you will be able to learn one fact from it: that psychotic symptoms are prone to occur in "degenerates," which remain isolated, like the quantivalent idea, or only attain a slight degree of intensity, so that it must still be questionable whether such an individual is to be considered really insane. That such borderland cases are very often met with in "degenerates" is nowhere demonstrated by such evidence as in Magnan's studies; but it is an exaggeration if the author seems to think that cases, like those I have termed circumscribed autopsychosis or quantivalent idea, occur only in "degenerates." That is wholly out of the question, unless the presence of the psychosis itself is to be accepted as an evidence of the degeneration.

In concluding this discussion, permit me still one remark for the purpose of preventing possible misconceptions. I am well aware that I have very unsatisfactorily performed the task I outlined for myself in giving a faithful description of the paranoiac states. You will find later that I have wholly omitted a number of important symptoms, while on the other hand I have mentioned many that really belong to the acute mental diseases. But the difficulty here lies in the affair itself. It is really impossible to clearly describe one province alone, as I have attempted, without encroaching on the whole domain and giving it some attention. But this impossibility has proven to be very much greater in the acute mental diseases, so that after many years' work I must finally change entirely the

plan of my labor and discuss the acute mental diseases, which are the chief source of the paranoiac states, after these. And this also applies to the individual symptoms. Every new symptom appearing spontaneously may give a mental disease an acute character. The majority of the chronic mental diseases are distinguished by acute paroxysms of new symptoms, which occur at some period of their course. I have intentionally avoided as much as possible a description of these states, because they will form a special chapter in speaking of the acute psychoses; but it was impossible to separate these paroxysms from individual symptoms appearing for the first time, for, as universal in Nature, there are imperceptible transitions.

The history of psychiatry is a topic of extreme interest to the expert, but for you, who yet need to be instructed in its rudiments, it must be subordinated to the urgent requirements of the present. Nevertheless I must not omit mentioning one point, whose importance in the history of our science is beyond question. It is the matter of Griesinger's primordial delirium. As you will hear so much of this great clinician, it will not seem strange that his text book is still one of those most read and has wrought a marvelous effect in its time. In this book Griesinger takes a standpoint alone and one not shared by well known older authors, in that he contests the occurrence of primary changes in the contents of consciousness without prior melancholic depression, and in 1867* he was converted to a more correct conception in the statement of his "Primordial delirium," after Snell† had taken the lead in his paper on "Monomania as a primary form of Mental Derangement." Owing to the dominating position, which is inherent to Griesinger's personality, you can fancy that the theory of primordial delirium now proclaimed by him agitated all minds and was greeted as a great advancement in our science. I very clearly remember at the time of beginning

*First published in 1870 in his "Vortrag zur Eröffnung der psychiatrische Klik, in *Arch. f. Psych.*, I.

†*Allg. Zeitsch. f. Psych.*, Bd. 22, 1865.

my psychiatric career in 1871, that this point was ever uppermost in the discussion of psychiatric topics. At any rate it was one of the undesigned effects of the book and Griesinger's teaching, that this only rarely happened, for the interest of all young psychiaters was largely devoted to brain and nerve diseases. In this state of affairs you will be surprised that I have not spoken of "primordia delirium" among the psychotic symptoms, which are to be considered the basis of the paranoiac states. This I will immediately explain. But first permit a remark as to Snell's situation, to whom priority to Griesinger undoubtedly belongs. Why is not Snell's name instead of Griesinger's united with the famous conception of primordial delirium? The answer is very simple; while the same phenomenon is discussed by both authors, the versatile clinician, skilled in clinical methods only had occasion to reduce it to a definite, elementary psychotic symptom, which he called primordial delirium. Both authors proceed from the same clinical experience, that in a certain kind of insane, whom Griesinger calls primary paranoiacs, Snell monomaniacs, delusions of persecution appear in exalted, self-conscious disposition, without preceding melancholia,* hence apparently primary. But while Snell was satisfied to grossly outline the course of these cases, the integrity of the intellect, the frequent complication of consecutive delusions of grandeur, Griesinger tried to penetrate deeper into the nature of the affair and find the source of the delusions of persecution and grandeur in primary false ideas, or more definitely, false judgments. To make my meaning clear, I cite some of these judgments. In a patient (a case of a psychosis of fear, *e. g.*,) the thought arises that his parents, his wife, and children are dead, and he is at once convinced of it. The thought comes to another, that he will be executed, to a third, that he is a millionaire or of noble descent. It is a matter of these "spontaneous thoughts," which are held to be true, a phenomenon reminding you of imperative conceptions and autochthonic ideas.

*In the conception of the older authors.

Thus at least can I now understand Griesinger and so I perceive his real merit. We see, how he expresses himself in this respect from his address at the opening of the Psychiatric Clinic on May 4th, 1867.* "According to our present assumption the processes, which result in ideas, occur in the ganglion cells of the gray cerebral cortex. As abnormal gait results from the spinal disease of tabes dorsalis, so by abnormal action of these cortical cells, images, words, ideas, which do not correspond to the reality, must be immediately produced." We see that Griesinger takes a standpoint very similar to our own. Still the difficulty has not escaped him, that irrational judgments might be produced from the preformed material organs of the process of thought. To explain this he points to two series of phenomena. First the derangement of the ganglion cells may be purely functional and excited from other remote places. He names this phenomenon, in which the first excitement may be due, *e. g.*, to sensations in the intestines, concurrent ideas. We may at once accept this view and, as you remember, I have repeatedly alluded to such an origin of definite ideas under the term of ideas of fear. The place to discuss this fully will be with the acute psychoses.

The second series of clinical phenomena, which he perceives to be analogous to the primary occurrence of certain false judgments in the insane, is the occurrence of imperative conceptions in neurasthenics and the great frequency of zoanthropy in delirium potatorum, finally the subjective sensation of a well-defined color, red, in certain pathological (*e. g.*, epileptic) brain states. Here a connection with the regular false judgments of the insane is only to be established with respect to imperative conceptions. So then Griesinger did not understand how the conformibility of these contents, delusions of grandeur and persecution, occurs, which perhaps "in five out of ten patients form the chief purport of the delirium during the whole course of the disease." We now know, thanks to Meynert, that

**Arch. f. Psych.*, I p. 143.

there are attributes of the primary ego, of the child and primitive man, which are reflected in this conformity, and I only need refer you to his essay "Ueber den Wahn"* to make it perfectly clear. Man in the primitive state will interpret as actions those events effecting his weal and woe as actions; on this basis delusions of persecution and grandeur are developed as the two fundamental forms of the individual's reaction, like that of men to the impressions of the world.

But we will now have to ask: Is there actually such a primary origin of the delusions of persecution and grandeur, as Griesinger thinks? This question I can only affirm conditionally. According to my information the presumably primary delusion of persecution for the chronic psychoses is generally developed either from delusions of relativity, as above described, or as an explanatory delusion, and any mode of origin, in my opinion, is out of the question for the paranoiac states, if we will not include the delusion of persecution of dementia. The same is true of the delusion of grandeur.† Still I admit, that besides the consecutive delusion of grandeur, which is developed as the logical sequence of the delusion of persecution, besides the delusion of grandeur of dements, which will be spoken of later, there are still two sources of the so-called delusion of grandeur, which may be readily overlooked and then the occurrence of a primary delusion of grandeur might be simulated. The one is a somatopsychical change in the contents, a hypochondriacal feeling of well-being localized in the chest, like the feeling of fear, and alternating with t. It is usually related to the process of respiration and described as particularly easy respiration. Thus it was for instance in the patient Schulz previously mentioned,‡ who fancied he was filled with the Holy Ghost, addressed inspired sermons to the people and traveled to a neighbor-

*Sammlung von populär-wissenchaftlichen Vorträgen, 1892, p. 83.

†Consequently I believe I am in accord with Snell, who essentially contests the primary occurrence of delusions of grandeur. Die Ueberschätzungsideen der Paranoia. *Allg. Zeitsch. f. Psych.*, Bd. 46, p. 446.

‡ALIENIST AND NEUROLOGIST, vol. xxi, p. 16.

ing city to take holy orders from a bishop. The delusion of grandeur is then only a case of my so-called ideas of well-being and forms the counterpart of the feelings of fear already mentioned. The second source is again the delusion of relativity, often in combination with certain quantivalent ideas, another time with the above described hypochondriacal feeling of well-being. The autochthonic ideas arising in cases of the kind, falsification of memories and the delusion of retrospective relativity then serve for embodiment in facts, the completion of the scheme, which is supplied by the exalted disposition and the increased self-feeling.

I should expressly mention one exception, so as not to do violence to the clinical facts. A chronic mental disease, developing early in life, Sander's* "*primary paranoia*," seems to occur, in which primordial delirium forms the original source of the grandiose ideas, according to Griesinger. Still pure cases of the kind are only very exceptionally observed. A careful study of these cases almost always permits the delusion of grandeur being traced to one of the elementary psychotic symptoms already mentioned. Except that an early essential mental weakness is peculiar to the majority of these cases of so-called primary paranoia, for the so-called primary paranoia and hebephrenia, to be described later, have many similarities and can be distinctly differentiated only in certain extreme, indisputable cases. According to my experience the most of these cases, in which not one of the real psychotic elements above mentioned is provable, belong to hebephrenia owing to their early pronounced mental weakness.

I cannot conclude this historical excursion without mentioning an important literary production, in which Griesinger's primordial delirium has found an eloquent champion, but unfortunately one overshooting the mark. Friedmann in his book "Ueber den Wahn"† seeks the peculiar char-

*For a special form of primary paranoia see *Arch. f. Psych.*, I, p. 378. The remarks as to the grandiose delusion on pages 278 and 279 relate to examples of so-called primary paranoia.

†Wiesbaden, 1894.

acter of the delusion—we say the falsifications of consciousness as to contents—in the paranoiac states in those false judgments manifested according to the type of the primordial delirium. The closely related imperative conceptions are therefore regarded as a fundamental symptom of "paranoia" accepted by him, but understood in a far different sense. We will see later that his assumption for the acute mental diseases is often true, but his attempt at generalization must be repudiated. In the chronic it is disproven by experience, and we will not go wrong if we charge this one-sided view of the careful investigator to his want of large experience with the insane.

WERNICKE (C.)

THE
ALIENIST AND NEUROLOGIST.

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OUTLINES OF PSYCHIATRY IN CLINICAL LECTURES.*

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Definition of the acute psychoses with respect to the chronic—Presentation of a case of acute psychosis almost recovered—Conditions and color of the explanatory ideas—A few new sources for the formation of delusions; from analogy, defective attention, pathological formation of associations.

LECTURE EIGHTEEN.

THE acute psychoses are primarily characterized by their mode of origin; we will have to regard all those mental disorders acute, in accordance with the use of the term in other diseases, which develop symptoms of significant intensity within a few hours or days. Besides it is to be stipulated as to the further development of the disease whether and how long it retains the acute character, or whether it recovers or passes into a chronic state. In the latter instance the acute psychosis becomes the acute initial stage of a chronic psychosis. With the same right, acute stages of the chronic psychoses occurring in other than the initial period will have to be included among the acute psychoses.

*Continued from the ALIENIST AND NEUROLOGIST, Vol. XXI, No. 2.
†English by Dr. W. Alfred McCorn.

Still it would little accord with the complex actual conditions and the use of words based thereon, if we would regard the length of course alone as the decisive indication in designating a psychosis acute or chronic. Rather the quality of the disease type, the "acute character," which adheres to it, owing to a rapid development, an indication of such independence, that even on longer duration of the disease, or, where the condition of a rapid development does not exist, it will decide in favor of an acute psychosis. This shows the special position, that diseases of the nervous system must be given: a sciatica or other neuralgia of years standing, an old tabes may be attended by the most intense lacerating pains, the extremely chronic trouble of brain tumor is attended at well specified periods by the most acute brain symptoms, *i. e.* a combination of headache, vertigo, vomiting and general convulsions. Thus the acute reactions of the nervous system are seen to be very generally dependent on irritation, which very often has no perceptible connection with the gross disease processes—the anatomical tissue changes. In our efforts to more definitely define the acute psychoses, we are consequently referred to other, more exhaustive criteria. I refer to my remarks* on the mutual relation of content and action of consciousness and then to the result, that the pathological changes in the content of consciousness must form the chief topic of our consideration, as they were in the chronic psychoses. We must now add, where this province is entrusted to us; the permanent or fixed changes in the content of consciousness. But we will not hesitate to further conclude, the pathological changes in the content of consciousness form the domain of the acute psychoses.

If you will now call to mind the scheme† I have given for the derivation of the symptoms, you will at once observe, that it is also a scheme of the pathological changes in the action of consciousness, changes, which in their totality we have known as disorders of secondary identification. It would be the task of an independent theory of

*See ALIENIST AND NEUROLOGIST, Vol. XX, p. 548.
†See ALIENIST AND NEUROLOGIST, Vol. XX, p. 153.

symptoms of mental disease to discuss those derived from the scheme, to put their occurrence and significance in the different mental diseases in the proper light. Still any attempt of the kind would take us too far from our real task of becoming acquainted with actual causes of disease, so I will confine myself to speaking somewhat fully of only the most important theoretically, of these disorders of identification, which are indispensable to the general pathology of mental diseases. They are chiefly those symptoms, which come within the province of false sensations or intimately connected with them. Besides I will have to confine myself each time in presenting patients to elucidating the symptoms, that are new in their significance with respect to our scheme.

Simple reflection will verify, that the symptomatology of the acute mental diseases cannot be exhausted by the symptoms derived from our scheme. Still we had seen that the action of consciousness produces the content of consciousness, so that a changed action of consciousness must of necessity result in changes in the content of consciousness, and we could define the acute mental disorders as the changes in the content of consciousness, we see effected within a certain time.‡ We are now often able to assume *a priori*, that these changes in the content of consciousness will be less fixed or of shorter duration in the acute mental diseases than in the chronic. Nevertheless the clinical significance of the disorders of the content of consciousness in the acute mental diseases is so essential and decisive for the fixation of a definite disease type, we feel that any theory of disease, which would neglect this point of view, must be biased and incomplete, insufficient for the great amount of clinical data. If in the chronic psychoses or paranoiac states we could confine ourselves in the main to the changes in the content of consciousness, you will now understand how much more complicated is our task in the acute psychoses, where the changes in the action of consciousness are equally as significant as those in content.

So it is that the sequelae, which in the chronic psy-

‡See ALIENIST AND NEUROLOGIST, Vol. XX, p. 548.

choses we say follow a number of elementary symptoms, are in great part manifested in the acute psychoses, even find there a broader application, *e. g.* the principle of explanatory delusions. And as explanatory delusions do not in themselves represent a pathological action of the organ of consciousness, we will become acquainted in the acute mental diseases with *new sources of delusion formation*, which are connected with normal mentality. The experiences we have had in this respect, form in a certain measure a supplement to the theory of the paranoiac states and therefore most properly follow them here. A patient selected for discharge, who has been free from psychotic symptoms for three months, offers a favorable opportunity. K. is a mechanical engineer of twenty-seven, with an academic education, who is to be regarded as recovered from an attack (the second) of a severe complicated mental disease, even to the defective insight for a few of the symptoms at the time of the acute onset. His well retained memory of the whole period of his illness amounting to about 1½ years, his intelligence and training in scientific observation render him peculiarly suited to afford information as to certain symptoms.

I will say merely that the patient fully describes the voices and autochthonic ideas at the time of his illness. We gather from this merely the lesson, that these elementary symptoms of the paranoiac state generally occur also in the acute mental diseases. The explanatory ideas, the patient has added are more important for our actual purpose. He was always fully aware, that the voices, whose material embodiment he did not see, were not to be explained physically, and so there was only left to him the assumption of supernatural action of "spirits," as much as he at first resisted the evidence of his senses. He then explained the strange thoughts as inspired by these spirits; that it did not here result in a delusion of physical persecution is certainly to be ascribed to the man's scientific training. We also see from the example, that the *explanatory delusions* are no less important *in the acute mental diseases* than in the chronic. A certain degree of retained

intellectual power is necessary to the hypothesis: logical requisites and logical ability must be present for an explanation of the strange manifestations. In general this hypothesis corresponds to a certain degree with retained self-possession as it was usually present in our patients. Besides the content of the explanatory delusion is shown to depend on the patient's individuality. How much this is the case can be seen from a second example. Among the thoughts inspired in him, our patient has also stated, that he has been in the world at different times as Wotan and Alfred the Great. He has therefore believed in transmigration. From my question if he had regarded it an act of resurrection, he developed the idea, that every person in his personality is to be looked upon as a definite arrangement of material part, and that he has considered it possible for the same arrangement of molecules to be repeated at different times and so the same persons be produced. As much as he now laughs at the assumption, it must be admitted that only a person with a scientific mode of thought would be able to formulate such an explanatory idea.

For the occurrence of complex explanatory ideas, as well as for the estimation of the autochthonic thoughts as such, a certain degree of self-possession must be inevitably presumed. If we accept that these false judgments, like those mentioned of having lived twice before at different times, could have been formed in this way, the smallest degree of retained power of judgment is necessary for such thoughts to be recognized as not originating according to the normal type. We will not then be astonished, if the acute insane, who lack self-possession, are sometimes in a state of complete confusion, strange ideas are obtruded and manifested, without their criticising them or attempting an explanation. In this way I recognize the occurrence of primordial delirium (Griesinger) in the acute insane, as I have formerly* stated in speaking of Friedmann's book on delusions. Although this author has adhered to his stand-

*See ALIENIST AND NEUROLOGIST, Vol. XXI, p. 315.

point, carried much too far in my opinion in his new work† on the origin of delusions, and tried to base them on comparative ethnology, it is still contradictory to the admitted exception of clinical experience. Besides you see at once, that the origin of imperative conceptions, or rather the correct judgment, which the patients hold toward these ideas arising from pathological stimulation, is associated to the like preliminary condition of a certain degree of self-possession and power of judgment. We will observe in the future, that these gradations can be obliterated in acute insane by spontaneous thoughts and replaced by Griesinger's primordial delirium, because the stormy affects, which disturb coordinated thought, are relatively frequent in acute mental diseases.

The patient describes a form of false sensation, which has not yet been met with and which he called a vision. He believed to have experienced whole scenes and situations during his illness, which had in part happened at other times. Thus for example, he said he saw his father on the scaffold in a French marshal's uniform, below the threatening multitude, heard the howl of the rabble and the executioner exclaim: "You must go." To my questions the patient states that he then believed himself taken back to the time of the French Revolution and did not doubt the reality of the event, which he now calls a vision. We will later have to study this form of false sensations somewhat more closely under the designation of visionary hallucinations. The conclusion drawn from it is of interest to us here. He believed himself transferred to the other lands and other times and explained this by sorcery. But my objection, that he should not have believed in the reality of the experience, because his father had not lived at the time of the French Revolution, he confuted very remarkably. He stated to have then believed that his father and other persons, like the supervisor *e. g.* could have lived before at different times. We evidently have here a conclusion from analogy as the source of delusion forma-

†Weiters zur Entstehung der Wahnideen und über die Grundlage des Urtheils. *Monatsschr. f. Psych. u. Neurol*, 2 Bd. 1. H.

tion and the patient assures us, that he had reached this conclusion, because he had been firmly convinced of his prior existence. You remember the patient‡, who claimed to have a double and generalized that everyone has one. You see that the insane make practical use of Goethe's proposition: "What happened to one, happened to others," a source of delusion formation of inestimable importance. But this *delusion formation by conclusion of analogy* will have to presuppose a relatively coordinated ability to think.

We will see later that the combined hallucinations of several senses, of which you have just seen an example, are perferably associated to visionary conditions. In this case the clinical history has shown, that the patient often seemed to be completely abstracted and oblivious to what went on about him. Certain peculiar assertions made then, he now is able to explain in a satisfactory and instructive manner. The patient had once expressed his astonishment, that the supervisor could have disappeared through one door and at the same time come to another. Another time that his food stood before him without having been brought in, an occurrence which reminded him of the fabulous "table be set." Both occurrences had seemed to him supernatural and marvelous. Now he says that it was an error in observation owing to faulty attention. He has often been so occupied, *e. g.* with false sight and hearing, that he has not sufficiently taken account of what went on about him. He has usually had his eyes closed, a statement I can confirm. We have here an instructive source of *delusion formation,* according to the principle of the effort to explain, *in the diversion of attention by internal occurrences,* and we see how very insignificant and ordinary events in this way appear to the patient in an incomprehensible and mysterious light and according to individuality may lead to different explanatory delusions, here to the assumption of sorcery. We are able to assume that the mysterious, disorientating nature of these events is manifest in any case entirely irrespective of the fact whether

‡Rother, See ALIENIST AND NEUROLOGIST, Vol. XX, p. 552.

explanatory delusions follow or not, according to the degree of ability to think.

As we continue our examination of patients we soon meet with a new, still unknown source of the formation of delusions. At a certain period of the disease the patient had called on his physician and later made the startling statement, that he considered him in a certain measure his son, also intimated that one of his fingers represented the person of the physician. We later learned that each of his fingers represented a certain person, one his father, one his mother, one Napoleon, while to the question what person a certain finger represented he was in doubt. The patient occasionally spoke of the legal position of the pater familias according to the Roman law, evidently based on this delusion. He now gives the following explanation: he got the idea that one of his fingers represented the person of the physician, because every time he saw him, even in visions and when he heard his voice a peculiar sensation occurred in this finger. It is the same with the other fingers. The patient is unable to describe the sensation more definitely, but states it was not a pain. We here see a new formation of concepts in consequence of a pathological experience, simultaneous with the occurrence of definitely localized pathological sensations, either real or pathological perceptions of a definite content. We will term this process *pathological new formation of associations* and will find it very frequently in acute insane, if we are rarely able to obtain such a clear account of it. Besides the patient now definitely denies on being urgently questioned, that he has considered the one finger identical with the physician, he only meant that it has a definite relation to him.

The example we have just become acquainted with will certainly recall well-known data. For instance the young man,* who became sexually excited every time he saw his father. I presented him as an example of somatopsychical delusion of relativity, but we cannot doubt, that a process of pathological new formation of associations is its basis. Other examples of this connec-

*See ALIENIST AND NEUROLOGIST, vol. XXI, p. 274.

tion between somatopsychical delusion of relativity and pathological association are presented by our patients. Once during his illness he had begged that his bed should not be meddled with, because blood is thus drawn from his heart, for a long time he could not be touched, because it caused him discomfort, once declared his head would burst as soon as one of the attendants said a certain word. All this we may regard as an example of somatopsychical delusion of relativity. It is readily seen that this pathological association may exercise a decided influence on the relation of the patient toward certain persons and chiefly his actions. Many wonderful, strange actions, wholly incomprehensible to normal thought, but also sometimes dangerous and unaccountable at any rate may be the result of this pathological new formation of associations.

A favorable chance affords the opportunity of demonstrating *ad oculo* a similar state of diversion by internal processes as described by the patient C. It is a matter of a very complicated disease and likewise in a young mechanic. It is impossible to get a word out of him. He gazes about the auditorium abstractedly and does not seem to heed my questions. Once he turned to me, called me by name, showing that he is orientated as to his surroundings, and at my request correctly repeated the Pythagoric theorum. He refused to demonstrate it, as it was too hard for him. Suddenly and wholly spontaneously he asserted in an animated tone: "You do not know Saxony and England." But he can again be fixed further. He shows he is greatly occupied with a supposed abuse by the attendant already referred to, tells of it in detail, constantly returning to it. Here in Breslau everything is not effected by natural means. Voices had nominated him Mayor of Breslau. The voices came from the air and the most different directions. They are heavenly voices. He comes to this conclusion, because he sees nothing. Besides thoughts are inspired in him. He is Christ as well as a Jew, has existed once before, confuting my doubt by the evidence of the third article of the Creed, which refers to the resurrection of

the dead. Suddenly and entirely spontaneously he said very animatedly: "career."

You see he understands my questions and promptly responds, still it must be remarked that he occasionally looks abstracted and answers questions by the mere query: "What?" He apparently requires a constant exertion of action to external stimulus and otherwise seems to sink into a sort of dream with active false sensations. Nevertheless he is wholly attentive in the meantime and shows he is able to correctly reproduce a number of four units ten minutes after it is given him. He promptly gives the date of his first acute illness five years ago, is aware of a subsequent relapse and considers it very possible that he is now sick again. We learn on inquiry that he has no headache, but very unpleasant feelings in the head, which he describes as boring and tearing, and are the result of the abuse by the attendant. If this is gone into more fully, he completes this statement: abuse by relatives committed at the same time. Suddenly with a glance at the attendant, who has accidentally gotten by from the chair: "I am not to blame." Claimed that this has been said of him. On leaving I tried to explain to him the purpose of the demonstration. As he went out he replied: "But you also direct that which does something to me. Every officer has his honor, I am no common man."

In this patient we see an alteration of very different states of consciousness, first a diversion by mental processes, which render him almost inaccessible and at most reminds of the physiological state of so-called abstraction, then a momentary fixability and, in spite of many alterations in this condition, a well retained ability to attend. The state of abstraction reminds of delirious conditions and seems combined with a visionary clouding of consciousness. No more abrupt contrast is conceivable then in the attentive, perfectly clear consciousness immediately after. As internal stimuli, which are closely intermingled with his clear consciousness, we may establish abnormal sensations, autochthonic ideas, simple and disorientating phonemes. The disorientation chiefly affects the autopsychical, next the

allopsychical domain. It is very possible that this patient will tell later, in case he should recover from this second relapse, of the mysterious occurrences during his illness and even be able to correctly explain them afterward by the diversion of attention, as the patient K. has done.

Delusion formation by analogous conclusion, diversion of attention by events of the world, and pathological new formation of associations are quite often met with in the chronic psychoses. But with respect to the other much more readily comprehended changes in content, already familiar to us, they are of subordinate importance. Differently in the acute cases, where in subsequence of the manifold alterations in the disorders of content, at one time the former, again the latter dominates and by their influence on the patient's action demand consideration. In this respect our patient's report is instructive and must not be neglected. Understanding of the acute insane is far more difficult than that of the chronic cases.

(*To be continued.*)

WERNICKE (C.)

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OUTLINES OF PSYCHIATRY IN CLINICAL LECTURES.*

By DR. C. WERNICKE,

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Definition of the acute psychoses with respect to the chronic—Presentation of a case of acute psychosis almost recovered—Conditions and color of the explanatory ideas—A few new sources for the formation of delusions; from analogy, defective attention, pathological formation of associations.

LECTURE NINETEEN.

Lesson from hallucinations. Hallucinations of the different senses. Combined and visionary hallucinations. History. Theory of hallucinations.

The lesson from false sensations, which in our previous considerations could only be touched upon, forms the most important topic of a general pathology of mental diseases and must therefore be familiar to us in its fundamental traits, ere we can go on studying examples of the various types of the acute psychoses. Since the time of Esquirol the false sensations have been divided into the two large groups of hallucinations and illusions. The hallucinations are perceptions which occur in consequence of internal stimuli without excitation of the sense concerned by an external object, the illusions are false perceptions, misconceptions of objects of perception actually present. According to our scheme hallucinations belong to the group of

*Continued from ALIENIST AND NEUROLOGIST, April, 1902.

†English translated by W. Alfred McCorn.

psychosensory hyperæsthesias,* *i. e.*, they represent a pseudoidentification by pathological stimulus, the illusions are to be accounted to the psychosensory paræsthesias, *i.e.*, they signify a falsification of secondary identification.

As to how far primary identification is concerned we will have to ascertain in speaking of the theory of false sensations. In the domain of the sense of hearing we have at command the cardinal data of hallucinations and from these we will proceed, as they possess by far the greatest clinical dignity. I again confine myself to those points, which are of fundamental significance in the matter of clinical experience.

Hallucinations of hearing occur in two different forms, namely either as voices or *phonemes*†, or perceptions of hearing of different kind. The latter, also called *akoasmas*, may be of the greatest variety, *e. g.*, the patients hear crackling, crushing, clicking, stamping, knocking, thundering, drumming, shooting or chirping, hissing, boiling, dripping, howling, bellowing, neighing, roaring. These noises occur especially in very acute disease conditions, quite often with signs of a severe affection of the general condition. In the dry tongue and mouth an evidence will often be found, that the Eustachian tube and internal ear are often affected sympathetically, so that the origin of false sensations from subjective noises of peripheral origin in the ear cannot be excluded; especially is this true of the simple elementary noises. They would have to be placed in the group of hallucinations from intense peripheral irritation singled out by Kahlbaum, among the *phenacisms*, and hence among the disorders of primary identification. This sort of akoasmas are evidently very near to illusions, in that it does not prevent the peripheral mode of origin, that they are fantastically explained and utilized by the patients. This mode of origin tends to the experiences which every normal person has of occasional subjective noises in the ears from internal peripheral irritation. Pure tones may originate in this way. As akoasmas, which cannot be thus explained,

*See ALIENIST AND NEUROLOGIST, Vol. XX, p. 154.

†See ALIENIST AND NEUROLOGIST, Vol. XXI, p. 267.

but must have another mode of origin, we will have to regard the hearing of distinct melodies, an orchestral selection or other acoustic impressions of complex nature, like groaning, whining, children's cries.

The voices or phonemes are also two different forms, they are either expressly called voices, when they are felt by the patient to be something special, different from ordinary experience, or are ascribed to persons actually present or in the vicinity. The first case is a pure example, that patients create a special term for the designation of a pathological symptom. If such patients are asked if they hear voices they usually answer affirmatively without hesitation and with the appearance of fully understanding the question. Others make use of voices entirely of themselves and without external suggestion of the expression. This indicates that a very definite accent seems to adhere to the hallucinations of hearing in words. Usually the patients can definitely state whether these voices are of acquaintances or strangers, in the first instances they may give the names and differentiate voices of men, women and children. Also the designation angels' voices, God's voice is sometimes due to an unusual, strange timbre. The voices at one time seem far away, again near by, they often come from the immediate vicinity, so that it seems to the patient as if whispered, spoken or shouted in the ear. The direction from which the voices seem to come can usually be exactly stated and in this respect the patients often develop a very marked faculty of localization, manifest only during the disease. Not only the direction, but also the exact place and distance from which the voices seem to come,are stated. It quite often occurs that the voices seem to change their location independently. The patient is thus led to personify the voices, in that he complains they fly or hover about him, he looks for them under the pillow and hunts them like an annoying insect. At other times it is not the abnormally keen localization, but the very correct perception that the voices accompany the patient, *e. g.*, on a change of residence or on a walk, which leads him to conclude that the voices can change location also.

In case of unilateral hallucinations, which are not rare, the voices change in direction with the position of the patient, a condition which under certain circumstances may lead to insight into the symptom's subjective nature. In such cases it is usually possible to demonstrate either marked deafness or blunted keenness of hearing in one ear. In these cases the hallucination is heard at one time in the sound ear, again in the one diseased. Perhaps conformity to law in this respect will be shown, when the ear trouble is definitely located by a thorough examination. Our patient K., who is hard of hearing from an old catarrh of the right middle ear, tells of a voice which has been so loud and close to the ear, that it had begun to bleed and in fact a small hemorrhage was once found in the external meatus.

The voices, which are construed as emanating from persons present and projected to them, owe this attribute to the pathologically fine localization of the phonemes. This sort of voices, by which the patients are led to a false conception of the persons about, deserve the designation of *disorientating phonemes*. Practically they are of special importance, for they often turn the patient's anger, rage and hatred to certain persons and may be the cause of violence. An assault on the supervisor by the patient K may be explained in this way. The disorientating phonemes are then the worst form of manifestation of voices, and in fact it is quite often observed that the first form of voices pass into the second, while the patient's whole condition is simultaneously aggravated. The same observation may be made in inverse order.

Hallucinations forcibly monopolize the patient's attention, even when the false perception is not understood. So for example indefinite noises precede the distinct phonemes, and they generally disappear by the patient no longer hearing them distinctly, but only in whispers. In both cases the patients very definitely state that they must listen to the noise, although they do not understand its meaning. This is so in the patient K last presented. Like many other patients he regards this compulsion as a physical annoyance and a sort of abuse.

A second attribute of hallucinations is their incorrigibility. It has long been known, that the best reasons and intactness of all the other senses do not suffice to convince patients of the subjective character of hallucinations. The chief argument on which patients rely is quite often heard actually expressed: "I have seen it with my own eyes or heard it with my own ears." And in fact the evidence of the senses is generally accepted unconditionally, when the whole attention is engrossed with the sense impression. But this is always the case in hallucinations, as we have just heard and also from our patients. The fact of the narrowness of consciousness, which was mentioned in my eighth lecture, prevents any correction at the moment of the hallucination, only after the disappearance of the hallucination could correction become effectual, then always when too late. The most intellectual patients, having to choose whether they will trust the evidences of their senses or not, prefer strange explanatory efforts than to admit the subjective character of the hallucination. The phonemes are not usually continuous, but cease at times when from proper advice a doubt as to the objectiveness of the voices may appear. They sometimes occur only paroxysmally. At the height of such attacks the attending symptom of anxiety very regularly occurs, but also quite often during its whole duration. Numerous constant hallucinations without any intervals are observed only in the severest per-acute cases of mental disease, when disorientation is simultaneously present. Nevertheless it can usually be observed that a certain diversion of the patient by medical consolation, an examination, etc., is possible and the hallucinations at this time abate or disappear entirely. Solitude, silence and the exclusion of active sensory impressions generally favor the occurrence of hallucinations. But cases are now and then observed in which these conditions cause the hallucinations to disappear, while they are excited by external sensory stimuli (functional hallucinations, Kahlbaum).

By *reflex hallucinations* Kahlbaum understands those which are produced by an actual sensation or another false perception, either in the same or another sense. Thus

Kahlbaum's patient heard the derisive name "Uncle August" every time he first saw strangers. A patient of mine in the premonitory stage of delirium tremens with intense anxiety heard the words, "scamp" and "hang yourself" in the ticking of the clock and the bubbling of a fountain. It is well to regard it a reflex hallucination, when a patient, who for a long time has been very abstracted, later gives as its reason that I had ordinarily insulted him at the conclusion of a conversation. It is perhaps due to reflex hallucinations that a few patients hear the contradictory commands—eat and do not eat, every time they see food. In their uncertainty only the decisive order of the physician will determine their action and get them to eat.

After hallucinations of hearing, those of *taste* and *smell* are to be considered, owing to their great clinical importance. They occur most frequently in the form that the patients believe they taste and smell poison, when apparently the word poison is employed for the designation of the most diverse substances unknown to the patient. More definite names are not lacking; chloroform, phosphorous, sulphurous acid gas are smelled, things causing disgust, like dog and human flesh, manure, feces or urine are tasted. Hallucinations of smell of themselves alone are often of very long duration and continuous, especially the odor of putrefaction or of other disgusting kind, which is ascribed to pathological processes in their own body. Hallucinations of taste are usually the cause of refusal of food. They are often of course not to be separated from the tactile hallucinations of the tongue, which generally refer to foreign substances in the food. The examples cited show that the content of hallucinations is usually disagreeable, menacing. Accordingly the great importance of the symptom consists in the patients wholly or partially refusing food in consequence of their perceptions. Hallucinations of taste and smell are the most important and frequent causes of refusal of food. An especially bad prognostic significance is generally to be ascribed to hallucinations of taste and smell. Still this applies only to chronic mental diseases. In the acute and particularly in the peracute

forms hallucinations of taste and smell permit no special conclusion with respect to the prognosis.

Paretics in the later stages are a well known exception to the general rule, that the content of hallucinations is largely unpleasant. These patients generally revel in perfumes and they are often seen chewing, tasting and smacking their lips for hours and days, even with all the signs of pleasure, often without refusal of food having preceded. Also in certain ecstatic states of the hysterical insane and after many acute intoxications such reveling in pleasing hallucinations of this sort occurs.

In all cases of severe acute mental disease a dryness of the mouth and nose, which must afford the most favorable basis for the origin of illusions, generally appears in consequence of the intense effect and thus induced motor restlessness. Evidently these false sensations of taste and smell are still less to be separated and differentiated from real hallucinations than in the other senses.

Hallucinations of sight have in general the peculiarity that they do not of themselves have the stamp of tangible reality, but appear to be superficial pictures without depth. They are very often designated pictures by the patients, at other times apparitions, shadows or ghosts, an expression which points to definite explanatory ideas. Also the common expression, "some trick is played on me," permits the conclusion that hallucinations of sight are devoid of the semblance of reality. An exception to this most frequent condition occurs in those cases, where the sensorium is clouded, stupor, a dazed condition or an ecstatic state exists, as well as in somnolency. So it quite often happens that the same patients, who see "pictures" only in the day time, tell of nocturnal visions of physical tangibility. States of intense affect render visions of this sort possible. A dreamy state of consciousness may serve as the basis of the visions in alcoholic delirium, but in part they have also the stamp of reality, as other acute intoxications afford a favorable basis for them. Later we will have to return to the content of visions. We will find them, like the phonemes, to be definitely dependent on the patient's affects.

Patients of intelligence and judgment, who can express themselves, claim their visions exercise an influence over attention. Thus *e. g.* a patient perceived the form of a man at a certain place in the room at night. She must gaze at him, could not take her eyes off him and watched him as he slowly approached the bed and bent over her, it all being accompanied by a feeling of anxiety gradually intensified to an intolerable degree. In delirious patients the visions are often accompanied by this feeling of anxiety, when, if not rare, the delirium is of an anxious character. The content of the visions then corresponds: the devil comes to get them, hell opens, an abyss yawns at their feet, the walls are tottering, the roof threatens to fall, etc. In melancholic conditions we meet with isolated hallucinations, which are a true imitation of the prevalent feeling of misery; deceased relatives, corpses, a coffin, a whole funeral procession.

Visions are also accurately projected to definite places in space, so far as they have been particularly described. You will remember the patient with numerous and most diversified visions, who definitely stated the picture had been about one and one-half feet away from him and on the whole no larger than a plate; nevertheless he had seen and recognized an entire landscape, the shore of a river and the form of a comrade bathing. When patients speak of shadows we sometimes meet with the statement that their visions are transparent, as one patient described the vision of a deceased relative.

Hallucinations of sight are more rare by far than the phonemes, and their clinical importance can in no way be compared with the latter. As they do not usually possess the complete stamp of reality they do not have the disorientating or confusing effect of the phonemes. Nevertheless they are very often the source of explanatory ideas, which vary in color according to the personality. As you remember our engineer K hesitated between the assumption of witchcraft and the other that the spirits heard by him would intentionally make him the witness of different events of the visions he described.

Hallucinations of the tactile sense, perhaps more correctly of the cutaneous sense, are the most common in delirium tremens. The patients feel animals creeping over the body, either vermin or reptiles, like snakes, lizards, toads, etc., and they constantly try to brush them off. Such hallucinations also occur alone in other acute mental diseases. Still more often they are of a more definite form, consisting of the feeling that the patient's fancy they are being covered with a powder or vapors blown on them, of course of a harmful nature. This hallucination is very common in chronic patients who usually belong in the category of hypochondriacal delusions of persecution. An abnormal feeling of heat of the skin may be the cause of delirious and excited patients trying to remove their clothing. The prickling sensation, so accurately described by many insane and interpreted that they are being magnetized, further the pathological feelings of heat and cold are also to be included among the hallucinations of the cutaneous sense, while pricks, blows, cuffs and other pains represent hallucinations of general sensation.

Hallucinations are often not confined to one sense, but several are affected. The combination of hallucinations of taste and smell is the most frequent. The natural result of this combination is, that the pathological perception in one sense is regarded as verification of the hallucinations in the other senses. A certain uniformity of the hallucination is thus presumed, so that sensations belonging to two different senses combine in the same way as actually occurs in the perception of definite concrete things. But this process seems to be the rule in *combined* hallucinations. Simple combinations, like those of taste and smell just described, are especially frequent in the senses which are noted for active organic sensations, so besides those mentioned, those of contact and the so-called hallucinations of general sensation, which we will later consider fully. Those combinations are conspicuous in their manifestation, which occur in the so-called higher senses and are accordingly characterized by the prevalence of the sentient content. The most perfect deceptions as to reality arise by the

co-operation of hallucinations of hearing, sight and contact. The patient believes he is transferred to a definite place and surroundings, *e. g.*, home in the midst of his family or to a cemetery during a funeral. He then sees persons act, hears them speak, and various noises like the rumble of carriages, dirges, etc., in short, the whole affair is reproduced somewhat as on the stage, where the patient may even take part. When the hallucination is past, the patient sometimes states he has come to himself, or it had seemed to him as though he had been in those surroundings, statements which permit the conclusion of a certain insight into the pathological nature of the manifestation. The combined false sensations of the delirious patient are similar, who fancies he sits on the box as coachman, sees the horses and street before him, calls to others to get out of the way, hears the horses neigh and the people shout, and is still really in bed in the hospital. With the exception of delirium tremens, these combined hallucinations are rare in the insane, whereas they are peculiar to and characteristic of febrile states in severe somatic diseases like typhoid, certain brain diseases, meningitis and certain acute states of inanition. Their preliminary condition in all these cases seems to be a more or less pronounced degree of confusion and blunting of the sensorium. As they also in their mode of manifestation have the greatest similarity to the false sensations in dreams, we may properly call them *dream-like* hallucinations. Epileptics and hysterio-epileptics may be subject to such dream-like hallucinations for hours and days, they occasionally appear in states of pathological intoxication, as after administration of ether, chloroform, belladonna and similar substances. In persons of markedly nervous constitution they may occur alone, without being followed by a mental disease.

As Kahlbaum states, it quite often happens that these dream-like hallucinations escape medical observation and may only be subsequently disclosed by the patient's statements. It is then improper or only in the cases just described to conclude the actual presence of hallucinations, it often being rather a matter of the familiar phenomena

of additive false memories. Another combination of hallucinations, which does not belong to the dream-like, deserve mention owing to their frequency. They consist in hallucinations of other senses or in that of hearing being interpreted, confirmed and eventually put into words by "voices." So *e. g.* nothing is more common than that patients with hallucinations of taste and smell sometimes hallucinate the words poison, human flesh, etc., or that patients with abnormal physical sensations give to the hallucinations of hearing definite terms, technical expressions, which they ever after use.

The comprehension of hallucinations as symptoms of the acute psychoses is of so great importance that I cannot help prefacing our theoretical discussion by a few historical remarks. The oldest theory of hallucinations, which has prevailed for a long time, was evolved under the influence of the great physiologist, Johannes Müller and is derived in the simplest manner from the physiological process of perception. It starts from the fact that normally we are able to accurately differentiate many pictures, (pictures of the imagination) from actual perceptions. But the difference consists physiologically in that an irritation of the sense organ, respectively sensory nerve, always occurs in the perception. Then if one will accept as their explanation, what is not to be avoided from the nature of hallucinations, an excitation of memory pictures (pictures of the imagination), it will then be a hallucination only when a pathological stimulation occurs simultaneously in the periphery, *i. e.*, in the sensory nerve, so that this latter forms the preliminary condition of the hallucination. Owing to this view the theory of hallucinations has been preferably cultivated, so that diseases of the sense organs or sensory nerves, which could have a stimulating effect, have been sought for. But only very exceptionally has it been possible to demonstrate such changes in the sense organs or nerves, and many apparently confirmatory data awaken doubts as to the correctness of this theory. Thus in hallucinations of sight the optic nerves have been found with gray degeneration and transformed into a mass of connective tissue, and also

in cases in which a very long existence of this change was to be proven before the advent of the hallucinations. It is similar in other cases of blindness owing to destruction of both bulbs. It seems extremely artificial to assume in such cases of years of inactivity of the optic nerves, that they could resume their function with the onset of a mental disease, or that irritative phenomena could have originated from the affected area, of which nothing has been previously noticed. The consequence of this difficulty was, that the requisite stimulus from the sensory nerves was located at their central terminal, and according to one, in their so-called nuclei (Schröder v. d. Kolk), according to others in the optic thalamus. Still it was as good as proven anatomically (by Luys), that the optic thalamus is a central station of all sensory nerves. This assumption first advanced by Hagen has the most adherents. Its latest and most active advocate, in only a slightly modified form, is Meynert. His opinion may be expressed somewhat in the following terms: When an insane person has a hallucination and, in spite of his other senses functionating normally, he does not perceive the pathological and subjective nature of his deception, this indicates a certain weakness of the intellect, respectively of the function of the hemispheres. The hemispheres are not only the organ of the intellect, but they have a second cardinal function, which consists in the inhibition and suppression of automatic and reflex irritative processes in the subcortical ganglia. A blunting of the function of the hemispheres causes a diminution of this inhibition and will therefore so act on the subcortical ganglia, that irritative processes occurring in them may be increased to the degree of stimuli coming from without. The hallucinations are thus explained by a state of irritable weakness, in which the irritation and weakness are assigned to two different localities. This hypothesis is defective in that it rests on a number of other hypotheses: thus on the assumption of pathological irritation in the subcortical ganglia, for it must be present to be increased to a pathological intensity; further on the assumption that the function of the hemispheres is blunted in patients with halluci-

nations. We will see later that this assumption is wholly superfluous. But if it should be accepted exactly as expressed in Meynert's line of thought, to consider the fact of the mutual inhibition of the functions of the hemispheres and to see the apportionment of these two opposite conditions within the hemispheres, so that the weakness of function would have to be considered allotted to the other parts of the hemispheres, while the increased function to the central projection fields of the sense concerned. There is no necessity for the further assumption of a state of irritation in the subcortical ganglia.

If I am compelled to take a position adverse to Meynert's hypothesis, I have to guard against a possible misunderstanding; I am far from mistaking that the hypothesis of this talented master finds its real foundation in his special view of the agency of the vascular system in the brain mechanism, and that I have singled out only one link in a chain of hypotheses, whose strength lies in their firm structure. But the purely descriptive tendency of our clinical studies compels us to waive all hypotheses not unconditionally necessary. Besides justice requires the mention of two of Meynert's predecessors in his line of thought. In his work previously mentioned Kahlbaum presumed, on the strength of Schröder v. d. Kolk's anatomical views, the seat of the stimulation in hallucinations of a definite kind to be in the subcortical centres and the primary nuclei of the nerves. And finally we have to mention H. Neumann's purely psychological statement. Neumann explains hallucinations by the suppression of that normal function of the brain, which he designates as criticism. He describes them under the disorders of criticism. That this conception, which is devoid of all attempts at localization, is completely covered by Meynert's hypothesis, that the function of the hemispheres (which is manifested as criticism) is blunted, is readily conceivable. Neumann's method of consideration is at least characterized by great impartiality.

These brief remarks on the history of hallucinations may suffice to show, how in consequences of Johannes

Müller's original assumption, authors have been obliged to go ever farther centrally and to locate the pathological stimulus from the sense organ and sensory nerve in the nerve center and then in the next higher station of the subcortical ganglia. Therefore, a co-operation of the central projection fields is indispensable, for the presumed stimuli from the subcortical ganglia, if simple note should be taken of them, could not possibly have the coordinated character of real perceptions presuming an action of association.

Our position with respect to the question is simply stated by the points of view I have evolved in my introductory lectures.* The difference between the memory picture and the idea is effaced in the hallucination by a pathological process. We have already found this difference to be that the first terminal station of the projection system in the central projection fields of the cortex, which we have called "projection cells," are also stimulated in the act of perception. We have become acquainted with these cells as the embodiment of the organic feeling and constituents of the consciousness of corporality. We will therefore be able to characterize the nature of hallucinations, by saying the pathological stimulus extends beyond the memory pictures to this embodiment of organic feellng, and a memory picture becomes an idea and consequently the hallucination, as soon as it is supplied with the inherent organic sensations—by excitation of these projection cells. It is then an affection of the consciousness of corporality, which constitutes the cardinal trait of hallucinations. The cardinal attributes of hallucinations just evolved become intelligible to us. Thus primarily the force they exercise on attention. Every intense organic sensation exercises this force, as I have shown you in different examples,† and that this force is likewise to be regarded as a protective measure for the aggregate of corporality, Meynert's primary I, you will also remember. It is now comprehensible why the affect of anxiety shows such a close connection, often a direct dependence on the hallucinations. This affect always

*See ALIENIST AND NEUROLOGIST, Vol. XX, p. 155-169, 355-365.

†See ALIENIST AND NEUROLOGIST, Vol. XX, p. 357.

occurs, as you remember, when the corporality, the "primary I," is jeopardized.

The remarkable observations of abnormally sharp localization of the hallucinations are comprehensible. The organic feeling, as constituent of the general feeling of corporality, is always referred to a definite place in the sensory layer of the skin, the retina or the epithelial layer covering the other sense organs. In the retina a very definite projection space is due to this, an attribute which, as we have seen, constitutes vision. It has further been proven that the adaptive movements of the eyes must be accompanied by organic sensations of the retina. We observed such adaptive movements of preformed kind in respect to the organ of hearing in all animals with movable auricles, and the remnants of motility of the ears, which man still possesses, are an evidence that man could once make such adaptive movements. It is reported of savages that their greater keenness of hearing renders them capable of localizing the origin of tones and sounds in surprisingly exact manner. This attribute is wanting in civilized mankind. But we see it occur in cases of illness and, as seems perfectly comprehensible, joined to abnormally intense organic sensations, which in part are felt to be directly annoying and so take the attention that the patient is compelled to listen to a hallucinatory whispering, although he cannot understand a word. As we will see later, abnormal localizations of phonemes occur, *e. g.*, within the body, in one leg or in one boot, as a patient said. We will now and then find the effect of anxiety localized in this remarkable way. We must perceive in this examples of pathological association in the consciousness of corporality and no longer regard them so strange.

(*To be continued.*)

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OUTLINES OF PSYCHIATRY IN CLINICAL LECTURES.*

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Lesson from hallucinations continued—Stability of preformed association bonds—Participation of the projection fields in hallucinations—Special localization of memory pictures—Paraphasic speech impulse of paralytics, compulsory repetition of phonemes—Different intensity of memory pictures—Hypermetamorphosis—Hyperæsthesia—Modification of the scheme of identification disorders.

LECTURE TWENTY.

THE conception just evolved seems to encounter an obstacle which merits our consideration. How is it possible, we may ask, that a pathological stimulus, whose localization is in a certain measure subject to chance, repeats that order of stimulation which appertains to a definite optical memory picture, or such an artificial grouping of individual impressions as belong to the acoustic memory picture of a word or a melody? Might it not be

*Continued from the ALIENIST AND NEUROLOGIST, Vol. xxiii, No. 3.
†English by Dr. W. Alfred McCorn.

expected that a pathological process acting at once, dependent on the chance of the affected area, might result in a wholly anomalous stimulation of the perception cells concerned of the central projection field in no way corresponding to the functional unity of the memory pictures and the concrete concepts? Still this obstacle is encountered more in dream-like or some combined hallucinations than in single hallucinations of one sense. We must perceive the peculiarity of these dream-like hallucinations consists in the stimulation inducing the hallucination occurring similarly, *i. e.*, with that arrangement of the stimulus which reflects an exact picture of the reality. In fact we cannot dispense with a hypothesis for the explanation of this remarkable coincidence, which I have previously indicated*, when I said the experiences of the clinic necessitate transferring the proposition of the specific energy of the sense elements to the whole association organ and assuming that in the unison of the same combination of associative elements the same psychical process always occurs. We had formerly employed this only so far, that we explained the appearance of definite thoughts as such a unison of a very definite combination of associative elements. We will now have to go a step farther and consider the origin of dream-like hallucinations to be a unison of these functional units by some special stimulus. In other words: in whatever way a stimulus may act on the elements united by repeated function and usage of functional units, the effect is always the production of a definite, specific content. Thus the simultaneously combined hallucinations afford us an example of the stability of these functional unions,† which represent the picture of the world. The consideration just advanced is especially applicable, when it is the matter of the irradiation of some stimulus to the intact central projection fields, while disease of the projection fields is able to produce pathologically changed hallucinations. Thus we understand A. Pick's remarkable observation in an individual who formerly had sensory aphasia. The hallucinations

*See ALIENIST AND NEUROLOGIST, Vol. xxi, p. 3.

†"Merksystemen" nach G. Hirth. Epigenesis der Merksysteme, Munich, 1897.

of hearing here had a pronounced paraphasic character and consisted of distorted words, sentences of disconnected words, etc. The same author reports a patient with hemi-optic defect of the homonymous quadrants of both visual fields. This patient's hallucinations of sight had the peculiarity that they had defects corresponding to the quadrants affected, so that for instance a head appeared with a corresponding sector missing. In progressive paralysis, that disease which always leads to a local disease of the projection fields, distorted or entirely senseless words are often hallucinated, but also elementary sounds which might owe their origin to the irregular local irritative effect on a diseased projection field. Optically the most diverse manifestations of light, visions of lightning and balls of fire, are observed, whereas the great majority of hallucinations are certainly to be ascribed to the irradiated irritative effects, for brain pathology teaches that the largest number of irritative symptoms depend on a transmission of the irritation from parts of the brain often remote.

According to the view just advanced we will not hesitate to regard hallucinations localized processes and to presume their seat to be in the projection fields of the senses affected. We are obliged to locate the first stimulation process in that locality, which corresponds to the memory pictures and to take from them a further stimulation of the proper perceiving elements arranged according to the norm of the projection system, "perception cells" as we formerly called them. This conception must, as is readily seen, support that hypothesis which locates the memory cells, not at the point of perception, but in other parts of the cortex, a hypothesis that has essentially gained in probability by a paper from my clinic by H. Sachs.* As you remember in my introduction I represented, as the essential factor of the memory picture, the form of the stimulus, *i. e.*, the mutual relation of the stimulated perception cells, and Sachs has proven, or at least made very probable, that the memory of this relation in the sense of

*Die Entstehung der Raumvorstellung aus Sinnesempfindungen. Psychatr. Abhandlung, von C. Wernicke, Nr. 5.

sight is not to be considered represented in different elements of the light field so called by him, the cortical termination of the optic tract, but in the motor oculi projection field. We might regard vision as the result of the process of sejunction, definite motor oculi memory pictures are excited and from there the coordinated precipitating elements of the light field so-called. This second act is involuntary, and we must hence conclude that only a stimulus of pathological intensity can overcome the obstacles opposing the enforced inversion of the direction of conduction. That these obstacles are very important, we conclude from the fact that most visions are described as shadowy and slightly luminous, while the other fact that they usually appear superficial and like pictures, indicates that the transmission of the stimulus from the motor oculi field to the corresponding one of the other hemisphere does not ordinarily occur—perhaps because no preformed path exists. We cannot generally expect from a stimulus due to pathological processes, that it is manifested symmetrically at identical places in both hemispheres, or we will admit this as possible only exceptionally and under certain conditions. For the estimation of depth, in so far as it is ascertained by the eyes, the cooperation of the motor oculi projection fields of both hemispheres will always seem essential. You see that the hypothesis of a more or less voluntary localized pathological stimulus affords the simplest explanation of certain fundamental attributes of hallucinations of sight. Of course the other possibility is not to be overlooked, that a pathological stimulus is exceptionally manifest in the light field: we then have so-called elementary hallucinations, manifestations of light of the most diverse sort, in which form is secondary. When anyone sees lightning, a cloud of fire, a flaming sword, a sea of fire or refuses the milk because he takes it for blood, or sees pools of blood in his bed, it is a matter of these primary stimulations of the light field—of course in consequence of the sejunction process.

That a similar consideration applies to the memory pictures of tones and speech sounds, H. Sachs has cleverly

shown in his paper just mentioned. Here in the memory pictures the relation of tones and sounds to each other is decisive, and therefore probable that these relations of magnitude are joined to a motor acoustic projection field corresponding to the motor oculi. The transmission of the pathological stimulation from this supposed field to the acoustic projection field conditions the occurrence of the hallucination and, as the great majority of relations of magnitude represent speech sounds, the subjective cause of speech sounds. In the exceptional case that the acoustic perception field is primarily affected by the stimulus, subjective noises and tone combinations of irregular quality, the akoasmas so-called, arise. That hallucinations of hearing and especially the phonemes, contrary to hallucinations of sight, have the complete stamp of reality, it is comprehensible from the fact, that the centre of word sound images is located on one side, so that in the phonemes we have an exquisite focal symptom of the left temporal lobe, at least of limited localization value, which irritative symptoms possess in themselves. This value materially increases as soon as to the symptoms of stimulation are added those of defect, and therefore this is the place to call to mind the occurrence of maniacal aphasia,* as I called it. We will see later that this name may no longer seem applicable, for it is more a matter at the same time of a hyperkinetic and parakinetic symptom. This symptom is that of the paraphasic speech impulse occurring quite often in paretics, an exquisite motor symptom of irritation, in which the defect, the disease of the first left temporal convolution, is manifested in the paraphasically altered form of the speech impulse. Contrary to the other isolated speech impulse of the paretic without paraphasic complication occurring quite frequently, which is a true maniacal symptom, this speech impulse also has in content a large motor stamp and doubtless depends on an irritative effect, which has its starting point in the affected left temporal lobe. We then perceive that any stimulation of the left temporal lobe may act in an entirely different way, in a certain

*Gehirnkrankheiten 3, Bd., p. 551.

measure contrary to that in the acoustic projection field, and that the irritative effect in these cases uses the preformed path to Broca's convolution.

Another fact deserves mention under the same point of view as the localization of the effect of irritation; I refer to the quite common imperative repetition of phonemes. This exquisitely motor symptom, which under certain conditions may be combined with paraphasia, points to an irritative effect, which belongs to one of the two kinds of irradiation familiar to us. It has the peculiarity, that the content of the phonemes very often consists in affectless series of associations learned by heart, *e. g.*, in the repetition of the multiplication table. As much as this circumstance speaks for a strict localization of the stimulus in the temporal lobes, these cases in no way belong to paresis, but to the motility psychoses, and this is true of imperative speaking without previous hallucination of the speech sounds.

You see that the knowledge of all these inwardly homogeneous symptoms places in the correct light the importance of the first left temporal convolution as seat of the phonemes, the most frequent and, I may almost say, the most important of psychotic symptoms. Nevertheless we cannot doubt that, excepting certain special cases, as I have in part indicated, the left temporal lobe is not the real seat of the disease processes, whose irritative effects it manifests. The phonemes are rather to be regarded largely as reflex or secondary effects, at any rate manifestations of irradiation from other localized disease processes—sejunction processes. This is proven by the one, at least fundamental fact, that exactly the same disease types may occur either with or without phonemes. The phonemes then show that they are replaced by a corresponding content of thought, if not put in the exact words. Besides from the further fact that the content of the phoneme conforms to the type of disease, is like the content of thought. We will soon have to go into this point more fully.

You see that any attempt to obtain a better understanding of the psychoses leads us to certain important questions in brain pathology, as *e. g.*, that of the special

localization of memory pictures. In my opinion this is now quite probable, not only from the properly presented theoretical statements of H. Sachs, but also from the observations, if still few, in which cases of asymbolia so-called has been carefully investigated and a careful autopsy made. Three such cases from my clinic, two with autopsies, have recently been described by Heilbronner* in my psychiatric papers, and asymbolia accordingly represented as a combined disorder, in so far that secondary identification is in part lost, in part the primary identification of the sense impressions. The first condition is explained by the autopsy from the bilateral breaking up of the medullary layer of the convexity of the brain mantel, between the occipital and temporal lobes on one side and the other parts of the brain on the other. The disorder of primary identification is amply explained by the partial destruction of the occipital and temporal lobes. Therefore the clinical presumption for the symptom complex of asymbolia, namely the integrity of the real act of perception is also confirmed by the autopsy, in that the light field of the occipital lobe, as Sachs calls it, and on the other hand the great part of the temporal lobe, are retained and still combined with the projection fibres. To make my position plain in this matter, I will at once state that I attribute the act of functional transmission from the perception to the memory centres to primary identification and will alone recognize the transcortical transmission of the stimulus to the latter as secondary identification. Also the autopsy of the case of mind blindness closely observed clinically by Lissauer,† anatomically investigated by Hahn,‡ supports this assumption.

A second equally important question, in which psychiatry is largely interested, is whether thoughts occur in words or concepts or largely in one of these forms. As you remember I have previously said, that thought is never exclusively associated with the presence of word concepts or images of word sounds only, that independent thought

**Psychiatrische Abhandlungen*, Heft 3 and 4: Asymbolia.

†*Arch. f Psych.* 21 Bd.

‡Arbeiten aus der Psychiatr., Klinik in Breslau, Heft II, Leipsic, 1895, p. 105.

in concepts is to be admitted. However, I might previously have stated that individual variations in this respect may exist, in a certain measure brain habits, accordingly some think largely in words, others in concepts. I fancy thinking largely in concepts is the deliberate, in a certain measure, scientific form of thought more exactly suited to reality. But I cannot deny that eminent brain experts like H. Sachs advocate another view and, so to speak, locate wholly logical thought at the seat of sound images, *i. e.*, in the left temporal lobe. As I have previously stated, this goes too far in my opinion and is contradicted by clinical experience in diseases in the left temporal lobe, but I must admit that, irrespective of an individual variation, a series of concepts exist, which in my opinion may be especially connected with the left temporal lobe as the seat of the word memory pictures, and therefore because, contrary to the other and especially all concrete concepts, the necessary word sound image affords in a certain measure the only rendezvous of all accompanying associative combinations, because further these latter are all acquired by means of speech. I do not mean by this the expressions for states of internal experience, which I have previously cited, but more artificially learned concepts acquired by instruction and in no way the abstract alone. This includes, *e. g.*, the numerals and their use, as well as concepts of historical dates and personalities combined with definite names, and actually many that are abstract. A thought which is independent of the left temporal lobe we will only be able to conceive of under the limitation to largely concrete concepts, we say with a certain simplification of the content of thought. In general the object of clinical psychiatric observation, namely the motor relation of certain external conditions, makes no essential claims, the less so as more acute the disease is, so that we can then actually take account of the accepted individual variation of different persons.

At least I know for a fact, that for a whole series of mental diseases, which occur at one time with, again without hallucinations—and it is always a matter chiefly of

phonemes—there is no other explanation than this individually different habit of thought, which in those thinking largely in words explains an increased excitability of word sound images and hence the readier occurrence of hallucinations.

If a doubt is possible whether thought occurs exclusively in memory pictures of words, it is wholly impossible to deny that one thinks chiefly in memory pictures, and that for the differentiation between a memory picture and an idea we must possess an absolutely reliable sign derived from internal experience. But it is a question how memory pictures of different intensity are estimated by us, and whether in this respect perhaps the elementary symptoms of autochthonic thoughts, imperative conceptions and quantivalent ideas permit of a closer analysis. Of these three symptoms the imperative conceptions are evidently the best known and most readily separated. But in the acute psychoses their clinical importance is relatively small. The quantivalent ideas, as we shall soon see, require a certain broadening of their definition. Then it is clear that they can claim a significance similar to hallucinations in the clinical picture of the acute psychoses. Of the autochthonic ideas, we have already seen that they are closely related to the phonemes, may precede or pass into them and occasionally are not to be separated from them, in that the patients do not know whether a real vocal sound is present in the prompted thought or not. The relationship now becomes more evident, in that the autochthonic ideas always seem to be put into definite words and that they have according to their content the same significance, as is especially clear, when the content corresponds to a command or interdiction and affects the patient's action.

The factors cited permit the interpretation that the autochthonic ideas, like the phonemes, are an irritative symptom of the temporal lobe, *i. e.*, an appearance of very vivid memory pictures of word images, without the irritation extending to the organic sensations of hearing. The like intensity of the pathological irritation presumed, would then necessarily result in the further hypothesis, that the irrita-

tive process, which may extend to the seat of the organic feeling, *i. e.*, the acoustic perception field, must have—functionally—origin nearer the temporal lobe, than another, which is exhausted at the seat of the memory pictures. We thus arrive at the assumption, which I have previously given you, that the difference in the localization of the sejunction process is the basis of the difference between hallucinations and autochthonic ideas.

I have already intimated that primary identification in the insane may be affected sympathetically. The two symptoms, which are here to be considered, relate to the real boundary between secondary and primary identification, namely the organic feeling adhering to the "perception cells," and it is not chance that they are chiefly observed in pathological states, which in their whole character are close to the so-called "organic" diseases of the brain and nerves.

By *hypermetamorphosis* we understand the organic impulse to notice sense impressions and take the attention. It may usually be shown experimentally, in that some sensory stimulus is brought near the patient, *e. g.*, shown the watch, the handkerchief, the purse or some object accidentally manipulated, for the sense of sight produce a noise, like the clock striking, making a half audible remark to a third person, letting the water tap run, humming a melody, for impressions of hearing; incidentally touch the patient, for tactile impressions; bring odorous substances near him, for impressions of smell. The patient's whole conduct may usually prevent the symptom unmistakably and immediately, and especially it is the occurrences on the ward, which imperatively claim the patient's interests. Still a distinction with respect to the sense is often plainly shown, in that many patients are more attracted by visual impressions, many more by the acoustic, especially in the patient's manifestations. We find an explanation of this symptom in the assumption of an increased excitability of the organic sensations, so that the innate attribute of attracting the attention is manifested in weaker, otherwise unobserved sensory stimuli. That in such exaggeration of

the organic sensations, the quietest surroundings with the most monotonous impressions offers the patient sufficient and more than enough material for the sense impressions, is comprehensible. The most suitable place for such patients is therefore in seclusion, for the symptom is of essential practical importance, because it can produce, maintain and increase a patient's motor restlessness, irrespective of the fact that the other patients may be disturbed, annoyed and affected sympathetically. The cardinal sequela of hypermetamorphosis is the distraction, *i. e.*, the faulty pliability of thought and the patient's inability to follow a certain train of ideas. The patient's answers, the information he will give of his own accord, may therefore have the appearance of being incoherent, because he is interrupted every moment by existing sensory impressions. Hypermetamorphosis is therefore a cardinal element of those symptom complexes, which we will later become familiar with under the name of confusion. In this symptom complex it may occasionally be the decisive and controlling element, but hypermetamorphosis is unable to form* a real disease type, it always seems to be an attendant, if important symptom in this respect.

Hypermetamorphosis is the most closely related to the so-called *hyperæsthesia of the sense organs*, a symptom which is common to many physical diseases. Hyperæsthesia is in no way identical with hypermetamorphosis and must not be confounded with it. In the insane it has only a slight and almost never independent significance, at most only in those chronic insane, who must be considered transitional forms to the hysterical type, then almost exclusively in hysterical women. Further it perhaps causes the symptom of timidity in certain dazed conditions common to epileptics, which owing to the evident blunting of the sensorium and their stuporous character, present a great similarity to well known symptoms of organic brain disease (especially meningitis). The timidity of certain very acute types of mental disease, which we will become acquainted

*The discoverer of the symptom, H. Neumann, has advanced such a disease type, but in combination with so many other elements, that it can only support my claim.

with later, probably depend in part on this, irrespective of the hyperæsthesia of the sense organs being observed particularly in the first increasing stage of acute psychoses and in their convalesence, when it renders the patients more or less intolerable and dissatisfied or irritated by the impressions from their surroundings, according to the personality.

The two symptoms just described cannot fail to remind you of what was formerly said in attempting to define mental diseases and separate them from brain diseases. If hypermetamorphosis depends on an increased excitability, a permanent irritable state of the perceiving elements, perception cells as we have called them, it does not belong to the disorders of secondary identification, but has its seat in the next terminations of the projection system. This is true of the hyperæsthesia of the sense organs, when its cause is not to be sought in a peripheral portion of the nervous system, what may be the case in all those instances, where the hyperæsthesia is manifested in only one sense. Therefore hyperæsthesia has always been described among the disorders of the peripheral nervous system, whereas hypermetamorphosis is always of central origin. Clinical observation confirms our conception, in so far that we will meet the symptom especially in the severe pathological states, irrespective of its uncommonly frequent occurrence in the agitated forms of paralytic psychoses. Among the non-paralytic psychoses it is particularly the two types of disease of confusional mania and the hyperkinetic motility psychoses, where the symptom is almost never absent and constitutes a very essential component of the disease type.

It will not seem strange that our scheme sAZm permits the deduction of certain boundary cases, in which the principle of secondary identification is violated and a transition between primary and secondary disorders of identification seem to occur. We will then have the same experience in the matter of motility, where we will meet with states of muscular rigidity accompanied by profound unconsciousness, which form a decided transition to epileptic

seizures, and yet according to their development can only be regarded as a specially violent exaggeration of symptoms of hyperkinetic and parakinetic motility in the course of severe psychoses of motility. We will quite often meet with the development of actual contractures as the result of habitual parakinetic identification disorders in the psychomotor domain. Our scheme also shows how universally nature does not go to work schematically. We must always remember that every scheme, and ours as well, only possesses the value of a means of instruction and explanation and is superfluous as soon as a better, easier or more correct grouping the facts is found. Rely upon it, no one is more imbued with this necessity than I, and that respect for the facts in this attempt to clinically present the mental diseases is my chief incentive.

We will now understand that we have the right to change our scheme as necessity demands without being accused of being illogical. This is the proper place to ascertain as to how far such a requirement exists.

I must still remind you of my introductory remarks as to organic sensations and the consciousness of corporality. We had then become acquainted with certain motor manifestations, which we have interpreted as protective measures for the body and traced them to preformed, probably inherited* mechanisms. Such movements were in part of a simple nature, like congenital reflexes, *e. g.*, the adaptive movements of the eyes, the withdrawal of a limb from a painful irritant, in part complex motor coordinations, like those of recoil, dodging, etc. Such movements have the common characteristic that they occur as reaction to active organic sensations, and half unconsciously, at least without any complex mental action. Experience teaches that these movements occur in the insane, and our scheme is not, or only under considerable constraint applicable to them. The change in our scheme, which is here necessary is merely that we consider given a sort of cortical reflex, a short cut, to use a comparison, to one of the shortest paths between s and m, a path which wholly belongs to the consciousness

*Epigenetic medullary system according to G. Hirth's happy expression. See "*Epigenesis der Merksysteme*, Munich, 1898.

of corporality and is relatively independent of further action of the organ of consciousness. We thus arrive at an explanation of a series of motor manifestations, which, according to their form, are known to us as reaction to intense organic sensations from normal mentality and are observed in the insane under conditions which permit the conclusion of an extreme blunting of the sensorium.

Thus *e. g.* the wallowing or agitated movements resembling jactation, often perfectly identical with it, in many profound dazed conditions of epileptics and paralytics, occasionally lasting for several weeks, continual and always of the same monotonous mode of execution. More definite motor coordinations are occasional, like those of twisting (under pain), doubling up, which point to active organic sensations in the intestines, without there being a doubt as to their central mode of origin. We will then presume the same mode of origin, when the patients are conscious and also able to inform us at once or afterward of the organic sensations that were the cause of their movements. The expressive movements, like crying and howling, often with all the force possible, are observed in consequence of a feeling of anxiety. Modifications of these expressive movements by special localizations of the anxiety, as *e. g.*, in the throat, stomach, bladder, uterus, usually accompanied by intense somatic sensations in these organs, are the ejaculation of grunting sounds more or less animal like, touching or pulling at these parts of the body, etc. Also the feeling of indefinite physical restlessness combined with corresponding motor agitation, ascribed by the patients to uncomfortable sensations beyond description and often to be observed in complete consciousness, one will be justified in tracing them to vague organic feelings, an analogue of jactation observed in unconscious states. As is seen in these purely somatopsychical motor manifestations, consciousness need not be summarily excluded. But it behaves like a spectator of these processes being enacted in a certain measure in deeper regions, sometimes not as a mere spectator, in that the affect may develop on the basis of perplexity or definite explanatory ideas.

When you reflect that by means of experiment, a paralytic weakness of the posterior extremities may be produced by contusion of internal organs, like the kidneys, you will immediately recognize the possibility that states of immobility and chiefly of an akinetic sort, may occur from the direct effect of pathological organic feelings on motility (by short cut). Normal mentality offers analogies. We naturally find that patients with nephritic or hepatic colic cannot move on account of the pain. Perhaps it is to be regarded as similar, when a state of general immobility moderate in degree is observed in patients who complain of an intolerable crawling sensation in the intestines, or when a patient awakens from a state of intense general immobility after lasting for months, gives as the reason, she had felt a bird in her body, etc. We will find comprehensible in this way the origin of akinetic symptoms when the muscles are the seat of the organic feelings. I have repeatedly observed cases in which any extensive passive movement is painful, it appearing coincidently with the most intense feeling of illness and usually with a complex of melancholic symptoms.

LECTURE TWENTY-ONE.

Disorientation the fundamental symptom of every psychosis—Perplexity combined with the condition of acute origin—Different kinds of disorientation and perplexity—Actions thus resulting—Motor disorientation and perplexity—Transitivism.

It might be advantageous if, ere we go farther, we become somewhat better acquainted with the most essential character of all acute mental diseases by means of our instructive case in the engineer K. The psychosis, which Mr. K. has had, will more occupy us greatly later, for it represents an extremely complicated and heretofore little known form of disease. But therefore it is useful for our

present purpose, for the patient has not only experienced a great part of the elementary symptoms, which can be derived from our scheme of the identification disorders, but is able to graphically describe the effect they have had on him. The most general expression we find for this effect is *disorientation*. In disorientation we have to behold the real nature of every psychosis. The identification disorders considered in our scheme merely represent the means nature uses to induce disorientation. There are no insane who are not in some way disorientated. If they are not, they are not strictly insane. In disorientation exists the damages, which the disease process,in greater part unknown, causes in the insane. All pathological changes in the content of consciousness, which temporarily or permanently appear in the insane, may be brought under this concept of disorientation. After my previous explanations of our scheme this connection between the action and content of consciousness, this legitimate consequence of disorientation from the pathologically changed action of consciousness can only seem natural. The importance of this point of view is the more evident, as I might emphasize, that the content of consciousness and its changes offer relatively the most comprehensible, most evident, most readily estimated manifestations. We will therefore classify the psychoses by the changes in content induced by the disease, exactly in the same way as we did with the chronic psychoses, and will find that we have thus obtained a natural system of classification complying with all the facts. Corresponding to our division of consciousness into three parts of corporality, the world and personality, we will encounter the clinical necessity of differentiating corresponding kinds of disorientation and hence use the expressions somatopsychical, allopsychical and autopsychical. Besides we will differentiate the disorders of motility occurring in part in the somatopsychical, in part in the autopsychical domain as a special motor kind of disorientation. When, as in the acute psychoses, the disorientation occurs acutely, it is naturally combined with an active affect. An applicable term for this is *perplexity*, which is quite often used by the insane

themselves. Accordingly we will hereafter have precise expressions for the different color of this affect in the words somatopsychical, allopsychical, autopsychical and motor perplexity.

Thus Mr. K. spoke wholly spontaneously of the perplexity in which he was for a long time. "He has always been surprised, nothing had come of his perplexity." The false sensations particularly, to which the patient has been subjected, are the cause. As he has always been essentially orientated as to his abode and the persons about and even presumed a certain orientation as to the combined hallucinations by regarding them visions, we see in him that the significance of the false sensations really consists, as we have previously* regarded it, in the picture of the world receiving a pathological accession not corresponding to the reality, but still the reality may be recognized as such and the allopsychical orientation retained in a certain measure. Further we will have to regard this pathological accession as disorientating. But the orientation in the actual data of the world is not invalidated by the hallucinations. I emphasize this, because we will meet it repeatedly in the acute mental diseases; by false sensations alone patients are not robbed of their orientation, even not by combined false sensations, in case a state of essential stupefaction does not exist simultaneously, whereas a high degree of allopsychical perplexity may result. One of the most instructive examples of this proposition,I have recently had opportunity to observe. It was a servant girl W. of 26, who had had epilepsy since maturity, and about one and a half years ago, when eight months pregnant, had a short psychosis (lasting six days) after a large number of epileptic seizures, since then has been feeble-minded and thus repeatedly had shorter or longer attacks of intense postepileptic psychoses. She recently had four epileptic seizures in one day, the next day had a febrile angina, but slept during the evening and a greater part of the night. Toward morning she suddenly awoke in a condition I was able to observe on my visit six hours later. She presented

*See ALIENIST AND NEUROLOGIST, vol. xxi, p. 10.

an extremely affective picture of despair; fire, hell, murder threatened her, she would be gotten by the devil, torn in pieces, tortured, butchered, broke on the wheel, burned, thrown into the water. The world would be destroyed by fire, the city burned, the Lord come. She heard all this from voices coming from all directions, from which she tried to escape by frantic efforts, by the most desperate attempts to kill and injure herself. Constant watching was necessary to prevent her doing herself harm. At the same time she saw heads, forms, flags, soldiers at the windows. Still she was perfectly orientated, attentive to the medical admonitions, recognized everyone about, took medicine readily. With the phonemes there was an intense feeling of anxiety in the breast, 4 grains of amyl hydrate had an immediate sedative effect; patient stated that the terrible talking ceased and thus the annoying feeling of anxiety. The attack was relieved without sleep occurring. Similar attacks of less intensity still repeatedly occurred during the next ten days, followed by the usual condition in the interval. In this patient we have learned that bromides, even in the largest doses, have always failed to relieve the psychical symptoms.

You cannot fail to remember now that condition I formerly termed destruction of individuality, and explained by the sejunction process. Here in perfect consciousness two groups of incompatible ideas exist, namely the correct conception of place and persons on one hand, and on the other the fanciful threats regarded as equally real. The first, as it seems, cannot cope with the affective color of the latter.

We will become acquainted with states of allopsychical disorientation accompanied by active false sensations. In view of the facts we have just become acquainted with, we are not justified in ascribing disorientation to false sensations, but must regard it an independent symptom.

It is very instructive in this respect, that the same patient K., who has now almost recovered from the second attack of his trouble, two years prior to the time of his first sojourn at the Clinic, he had been in a condition for

months which consisted in a moderate degree of allopsychical disorientation and entirely free from false sensations. Patient was then surprised at everything he saw and experienced, and thought it all had a meaning, as *e. g.*, that food one time was put in his hand, at another put beside his bed, a third time was handed over the bed of another patient, that the resident physician had once sat with his legs crossed, again with them stretched out, one time had sat on the edge of the bed, again on a chair. Once while a pile of washing was counted in the corridor, the patient stood full of astonishment and declared he would stay up all night to see what became of the soiled linen. The patient was then rendered incapable of any coordinated action by the impulse, unnoted by him, of cogitating over every trifle and said: "He did not understand anything that happened then, he did not know what he should do and not do." As nutrition suffered, he was expressly commanded to eat, and it then improved.

Besides the states of allopsychical perplexity and allopsychical disorientation, we had to constate in our patient autopsychically a confusion of his orientation. He stated that during his illness he believed to have acquired insight, that in very early childhood he had not been cared for by his parents, but in a deaconesses' asylum, and then later returned to his parents. He believed to remember whole scenes from his child, which he thus explains. We also learned that the idea had become fixed in him, he has to suffer for others' sins, and in transferring this idea to others,* his relatives and the resident physician should have such a duty. The idea of being a saint and of having existed before at different times, controlled him for a long time. Autopsychical orientation has likewise suffered without the memory of his actual personal experiences being lost. For the mental state induced by the opposition of these two incompatible series of actual and imaginary facts, the patient characteristically used the expression, perplexity. We will qualify it by autopsychical.

That the various pathological sensations and disorders

*See ALIENIST AND NEUROLOGIST, vol, xxiii, p. 133.

of general feeling, to which the patient has been subjected, were suited to produce an affect, is at once evident. We will see later, that the most intense affects are combined with the changes felt in the body. The affect will be the more intense, as more the new feelings differ from the familiar physical sensations. Thus we hear the patient describe the feeling, as though the brain was soft, as though it was enlarged and again contracted, as though the head and body were hollow, as though his body was drawn in certain directions, as though he was inserted in a magnetic current. The most of these expressions were evidently comparisons used by him to express his perplexity. We may conclude from the thus induced affective mental condition, that the attempt made by the patient to take his life was due to these feelings. The *somatopsychical* perplexity had evidently increased to despair. As we learn the patient had intense feelings of anxiety at the onset of his illness. He located the anxiety in the cardiac region and also distinguished it perfectly from the feeling of cardiac spasm and palpitation, as he did headache from other abnormal sensations in the head. This localized anxiety, which we wili meet with frequently, may perhaps be regarded as a component symptom of somatopsychical perplexity.

We will not go amiss, if we consider a series of conspicuous actions observed during the patient's severe illness to be the result of this prevailing mental state of perplexity and will try to understand it from this point of view. He has occasionally drank from the cuspidor, defecated in the sputa cup, on the floor, another time urinated in a pitcher, put his clothing on wrong, laid down on the wet ground in the yard, etc. The patient now gives partial reasons. He presumes he had suddenly become tired, states he had been surprised by a sudden desire to urinate or defecate, and did not believe the rest. He has forgotten many things, as we may readily believe. But we cannot doubt from analogy with other patients, that these are the *actions of perplexity*.

Another series of conspicuous motor manifestations by

the patient are to be judged from an entirely different standpoint. Thus he has actually made gymnastic movements, for a few days sung several senseless syllables and accompanied it by beating time with his arms. He has made remarks at the same time by which it is shown that he is by no means in the corresponding jovial mood. The patient now confirms this. He has sung, although he had not felt like it, and now does not know how to explain it. But on inquiry we learn that the singing, like the beating time with the arms, might be the result of voices, without, the patient thinking he is the subject of a direct impulse. In the same way he explains the circumstance, that he had thrown himself on the ground shortly before admission to the Clinic and howled rhythmically with all his might. This has been merely a reaction to voices, which had "demanded blood." The patient explains the technical term "to demand blood," which he let slip at this time, by the frequent repetition of the word blood by the voices. We will later meet with the phenomenon so often that some movements are made by the patient in full consciousness, but are not volitional, the analogue of autochthonic ideas, only with the difference that it is a matter of motor or objective ideas, so that it is now advisable to employ a name for these peculiar phenomena. I generally call them pseudospontaneous movements. Explanatory delusions are usually combined with them. If our patient simply reports the fact, without adding an explanatory delusion, this is due to the fact of the patient having been too absorbed in the voices he heard at this time. Less precise than with respect to the pseudospontaneous movements is the patient's information regarding certain motor defects, which have been observed in him for a long time. The patient has not spoken voluntarily (initiative mutism) for weeks and only rarely on being questioned (reactive mutism). The balance of his conduct does not permit the conclusion, that this is due to conscious refusal, for the patient has often been seen trying to speak and move his lips without uttering a sound, in spite of a perceptible effort. The patient now admits this much as certain, that there has been no real

paralysis of the muscles, which had prevented him from speaking, besides he only knows that it was hard for him to speak without being able to give any further reason; he expressly denies having been forbidden to speak by voices. We hear the patient describe hyper (para) kinetic as well as akinetic states (disorders of identification) in circumscribed muscular areas; he is able to do this, because he remembers them exactly. His mental state during these strange and incomprehensible phenomena, he is no longer able to describe more exactly, having only very general expressions of astonishment for it. Still, as he has perceived these phenomena in himself during perfect consciousness—what is not always the case, because these states are often attended by clouded sensorium—we may presume them due to a corresponding affect, which we will call *motor perplexity*. We thus obtain an expression for a very complex mental state, which affects the autopsychical, as well as the somatopsychical domain, the first in so far as the movements executed in full consciousness are generally an emanation of the personality or individuality, the second therefore because the involuntary movements must be sensed as changes in the body (with respect to its position in space). Motor perplexity will generally lead of necessity to the formation of explanatory false ideas. If we would simply believe the patient's statements, these would here be entirely wanting. But on the contrary I must appeal to other numerous experiences, which cannot appear accidental, that the patient has alluded to in speaking of his autopsy, chical disorientation, which we can now connect with the stated motor disorders of identification. He has said he has believed to have to suffer for others. This "saviour idea," as we will call it, so frequent in the insane, is very commonly united to motor symptoms as an explanatory idea, as they have been above described, in that the akinetic symptoms are interpreted as a trouble imposed by God, the hyperkinetic in that the patient is an instrument of God.

The affect of perplexity is, as you will have seen from the previous remarks, a sort of reactive phenomenon to confusion in orientation induced by the stated disorders of

secondary identification, it is then not to be strictly separated from disorientation and frequently combined with it, but may occur as you have seen, when a certain orientation exists and in this way effects the opposition to reality and disease manifestations in the patient. It is found in the acute psychoses exclusively; in the chronic it will be sought for in vain. Still it occurs in the frequent acute exacerbations of the chronic psychoses and gives them the stamp of acute diseases. Where it is a matter of a very general disorientation, the affect may therefore be wanting and thus purer the type of disorientation, whether it be in the allopsychical, autopsychical or somatopsychical domain.

On the other hand, as is readily understood, the affect may be wanting, because the capacity for vigorous reaction to the acute disorders of identification is very generally blunted, *i. e.*, in defect states, as in paretic dementia, presbyophrenia and hebephrenia. Here the absence of perplexity is just as characteristic as is its presence in other cases. At this time I mention another symptom which is frequently combined with perplexity, yet is to be differentiated from it and is essentially a consequence of autopsychical disorientation, we will call it *transitivism*. It depends on the fact that the patients, who are devoid of any sense of illness, are so changed in their whole thought and feeling, that the presumption of identifying trains of thought, which render us capable of correctly comprehending the conduct and behavior of other persons, no longer occurs in them. It is preferably their own relatives, whose conduct seems strange, peculiar and incomprehensible to the patient so that they come to the presumption that they must be insane. This symptom is the purest in certain acute disorders, which have been preceded by a long premonitory stage of symptoms not especially psychotic. It culminates in the occurrence I have encountered a few times, that the patient accompanies his relatives to the office to introduce them to the physician as presumable patients. A more careful examination of the patient in these cases has always shown, me that periods of intense affect combined with disorientation were present.

These remarks do not of course fully describe the affective state of the acute psychoses, still less can it be said that every acute psychosis is accompanied without exception by the same affects. But you have at least the material indispensable for taking up the theory of illusions and the conformity of the content of phonemes. Hence it is necessary to return once more to the concept of the supraquantivalent idea.

(To be continued.)

WERNICKE (C.) Cont'd 22.

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OUTLINES OF PSYCHIATRY IN CLINICAL LECTURES.*

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LECTURE TWENTY-TWO.

Further as to supraquantivalent ideas—Theory of illusions—Their conformable content—Conformable content of false sensations generally.

WE had previously considered as the basis of the supraquantivalent idea the frequent repetition, possibly intentional practice of definite trains of thought, a process, which must be recognized as of the greatest influence in the education of an individual, for which of late the apt expression of preparing the way has been employed. This conception requires broadening in so far as the preparing the way, will in general go hand in hand with an affective coloring of the idea. Thus occupation is very especially suited to produce a supraquantivalence of certain ideas, but at the same time their affective color is expressed, in that momentarily the person's preponderating interest is turned to his occupation. We observed the remarkable fact that the susceptibility to certain definite perceptions is thus remarkable increased. To select the most pertinent example, any disorder or neglect on the part of the attendants is at once noticed by the experienced alienist on his rounds through the hospital, his attention and his interest is turned to it without a conscious effort being required; what we call discretion in any

*Continued from *Alienist and Neurologist*, Vol. xxxiii, No. 4.
†English by W. Alfred McCorn.

business affair has this foundation. Likewise the plastic artist considers the form, the tailor inspects the attire, the shoemaker the boots and unmarried girls notice the ring on the fingers of men. The increased excitability for certain sensory stimuli is shown to be dependent on the increased quantivalence of certain complex psychical processes. If under certain conditions an event of such common occurrence as *e. g.* the apple falls from the tree, has attracted the attention of a Newton, it is not an accident, but depends on the increased interest, which is due in part to certain ideas prevailing at the time, even in an event previously indifferent. It is similar with all inventions and discoveries, in so far as they are combined with daily observations. How partial this faculty for the reception of certain sensory impressions may be in the prevalence of certain ideas and their affective color is shown by the example of the mother, who in deep sleep is oblivious to every noise, except the least move on the part of her child. We will call this occurrence partial intrapsychical hypermetamorphosis. We may consider such an affective color and thus induced supraquantivalence of ideas the most common basis of illusions.

The theory of illusions is in great part based on the experience from the sense of sight, and the best known example is the interpretation of indistinct and vague visual impressions in a terrifying, fanciful manner, *e. g.* the distant tree stumps as robbers, the flapping washing as ghosts, etc. Evidently these are errors of judgment, *i. e.* clouding of judgment by affects like fear or anxiety. We purposely differentiate a distinct and an indistinct perception. The clouding of judgment in the latter case may so act, as in the examples of visual illusions cited, and the affect will have to be considered the cause of the illusions. But it is asked, by what process does the affect have this influence? As we have seen, we must ascribe to the affect the attribute of so changing the normal quantivalence of ideas that certain ones become supraquantivalent, others infraquantivalent in comparison. Supraquantivalent ideas have the attribute of being excited peripherally more

readily, the infraquantivalent more difficultly than normally. The supraquantivalence of the affective ideas of robbers and spirits then in our example pathologically facilitate secondary identification, the infraquantivalent interfere with the memory pictures in other senses or correcture in the same sense.

The affect may be of another nature or some association process of an individual sort may cause a supraquantivalence of ideas, which has exactly the same effect. I know of the instance of a young married man, who on a business trip to another city made the acquaintance of a lady and went with her to a place of amusement. It then occurred to him his wife had relatives here and that by a combination of improbable, but still possible conditions, she might suddenly conclude to visit the city and also come to the same resort. He inspected the company present and was soon so firmly convinced of recognizing his wife in a lady not far away, that he did not dare insure himself of its truth by going nearer, but decided to leave the place. I know of scarcely another example, which could so suitably illustrate the preparing influence of single affectively colored and thus supraquantivalent ideas for secondary identification in the normal person. If we think the affect increased only a little and the mental state thus clouded, and affective state, which we may assume in many recent cases brought to the Clinic against their will, a series of illusions thus become at once comprehensible, which we frequently encounter under these conditions. Related supraquantivalent ideas here are a separation from the relatives and the force used in bringing the patient. It is then not strange if relatives are believed to be recognized in persons at a distance and not distinctly seen, the State's attorney in the physician, a prison in the Clinic. Such illusions are frequently met with in many acute mental diseases. They are characterized in general by their instability and ready correcture. In very severe cases a certain confusion, an evident lack of attention may be added, so that the condition of an imperfect perception is replaced by a defective state of the sensorium. Then, so long as this

condition exists, numerous illusions occur, but all of which have in common that they change in content according to the ordinarily rapid change in the supraquantivalent ideas. Delirious states of the most diverse origin offer pertinent examples. It is not accident that the alcoholic deliriant believes he is among his companions, at the saloon or engaged in his daily occupation, thinks he recognizes in the physician his cabman or cronie: these illusions correspond to his supraquantivalent ideas. Under these conditions a good patriot considers the supervisor the Emperor, and if the delirum is of an anxious nature, executioner and State's attorney are illusioned. Inaccuracy of perceptions, which must favor the occurrence of illusions, will have to be accepted as existing so long as the patient is resigned and evidently in a dazed condition, so-called (Dämmerzutand). The same preliminary condition will lead to corresponding illusions in states of hysterical, epileptic or so-called exhaustion delirium.

The occurrence of illusions is harder to understand in apparently complete mental possession, attentive condition and sufficiently distinct perception. But in this case the content of the illusion is usually determined by certain effective ideas. Then ordinarily some exact sign may be ascertained, which the patient has utilized for his false identification. Thus it often occurs that an insane person considers the physician, attendant or some other patient a near relative, because he discovers some actual similarity, *e. g.* in the facial expression, the form, gait and sound of the voice. This mistaking of persons seems to be stable and is hard to correct. In a case of stabile mistaking of persons cited by Kahlbaum, on the same basis I presume, the illusion was so fixed that the patient failed to recognize his real relative and called him a swindler, an experience not so rare among insane after a long detention in the institution. It is certainly not an accident, but perhaps the longing for the relatives induced by the hospital detention, which is the cause of this misconception. Evidently the pathological process consists in concept of the relative, possibly the brother, being so supraquantivalent that the par-

tial identification of the actually similar tone of voice has the same effect as the blunted sensorium in the cases previously mentioned. Normally the difference in form, size, features and facial expression should prevent the identification.

Does not here exist, you will ask, a defect, a weakness of reproduction in those component ideas belonging to the concept of the brother, which relate to the form, size, cast of countenance and facial expression? A weakness of the cortical function according to Meynert, of criticism as Neumann calls it? This assumption is entirely superfluous, if you will call to mind the attributes of the supraquantivalent ideas above given. As we have seen in the case of hallucinations, the pathological supraquantivalence of ideas alone suffices to produce a process of identification, how much more must this be the case when an actual, if only partial primary identification aids in this inner process! Thus is shown the inner fixity of the once acquired concept, now become supraquantivalent: brother. Hence it can not be denied that under certain conditions this weakness of reproduction, even a paucity of concrete concepts for certain component ideas may be present in an insane person, as *e. g.* in paretics and senile dements, who may declare straw to be gold owing to its yellow color, bits of glass diamonds from their hardness and transparency. But then this paucity of the concept may be demonstrable elsewhere and this is in no way the case in the previously mentioned acute insane. You see that in the conception of the illusions, at which we have arrived, the difference between distinct and indistinct sense perceptions, that first seemed so important and essential, loses its significance, just as the principal difference between illusion and hallucination disappears. The illusion now seems to us like hallucination, whose appearance is facilitated by incidental external conditions, a conception to which intelligent older authors, like Kahlbaum, had come long ago. We will surely admit this proposition only for the illusions of the insane and for descriptive, practical purposes hold strictly to the distinction between illusion and hallucination among

the patients of our Clinic. The same reflection will lead us to conclude theoretically no other position for the previously mentioned hallucinations of evident peripheral origin, *i. e.* in the sense organ, Kahlbaum's phenacisms, like the hallucinations from purely central cause. Such phenacisms play a great part especially in the matter of taste and smell, in that the bad taste from buccal catarrh, the bad odor from nasal catarrh is misinterpreted as poison. Here also, as we will see later, a supraquantivalent allopsychical idea of anxiety is the cardinal cause.

From the conditions mentioned it becomes in a certain measure comprehensible why in the frequency of hallucinations they conform to law, so that phonemes largely predominate and often exist alone. This is true particularly of many chronic mental diseases. In the acute it is often observed that at first only phenomes occur and the accession of hallucinations of other senses correspond to a recognizable aggravation of the symptoms to a certain intensity of disease. It is readily understood that in the close connection between ideation and sensorial speech fields a higher degree of irradiation of the stimulation is essential to radiate to the projection fields of the other senses, that is that which results in hallucinations or word sounds. I know that the opinion is common, particularly from the writings of Charcot and his pupils, that the process of thought takes place in an individually different manner, which far surpasses the measure of individual variations admitted by me, so that ostensibly many persons think only or largely in optical word pictures, others in acoustic, others again in the motor. Without contesting this, I suppose it is for very rare, exceptional cases and therefore not permissible to use it in the theory of hallucinations. That next in frequency phonemes, hallucinations of taste and smell are observed, in the acute mental diseases at least, is explained by the fact that it is here usually a matter of phenacisms and these naturally must occur more readily than the real hallucinations.

Now after I have evolved a definite theory for the false sensations of mental diseases, I am in position to

briefly discuss their conformity of content, as I have repeatedly stated, on the basis of a few examples. The law here concerned is, that the content of false sensations is determined by the prevailing affective state. The affective state and consequently supraquantivalent ideas are now the most excitable, and not only for the stimuli conducted from the sense organs, as we have previously seen, but also for the central pathological stimuli associated with the sejunction process. To begin with something familiar* I refer to the occurrence of a hypochondriacal feeling of well being. Accordingly in such cases supraquantivalent ideas occur, which give expression to the feeling of well being ,and the corresponding phonemes have the content of delusions of grandeur. A pathological euphoria we will become acquainted with in mania. If it here results in hallucinations, they are hallucinated ideas of grandeur. Inversely in melancholia the affect is one of profound dejection. Accordingly the content of the phonemes, if present, is usually that of micromania. The more frequent visions are in form of ideas of dejection. The psychosis of apprehension has been repeatedly mentioned in the paranoiac states. The affect of anxiety leads in full conformity to law to definite ideas of anxiety, which I differentiate as autopsychical, allopsychical and somatopsychical. Of these the autopsychical are in part identical with the micromania of the melancholic, then self-accusations or, if in a phonemes, accusations and insults. The allopsychical ideas of anxiety have the content of threats and derogation. Accordingly the patients hear they will be killed, tortured, burned, given to wild animals, driven out into the snow or naked through the streets, etc. It is due to somatopsychical ideas of anxiety, when a patient hears her globus interpreted by a voice to be a cancer of the larnyx, a bronchial irritation a sure sign of consumption, cold extremities the approach of death.

The most common and general state of affect met with in recent cases is that of perplexity, produced by a certain moderate degree of disorientation. The most frequent content of the phonemes corresponds to it. The pa-

**Alienist and Neurologist*, See Vol. XXI, p. 314.

tient's assertions are highly characteristic: Where am I—what shall I do—what is the matter with me—I do not know anything, and similar disconnected exclamations are heard again and again. If the patients hear libelous names and insults, reproaches for imaginary misdeeds, hints of events that have never occurred, it is the result of autopsychical perplexity. It is often possible to conclude a posteriori such content of the patient's phonemes from their assertions and with perfect certainty, for they permit no other interpretation. I cite *e. g.* the following: I am no thief, I have poisoned no one, I have killed no children, etc. When the patient's identity is contested by the voices, it leads to assertions like *e. g:* my name is so and so, I am not a princess, am not married, have no children, these being evident reactions to the affect of autopsychical perplexity. Allopsychical perplexity is expressed in phonemes referring to the place and surroundings. The patients hear they are in prison, in heaven, in an enchanted castle, on a ship, etc., that the fellow patients are disguised and belong to the other sex, or disguised police, that the bed is not an ordinary one, the bath tub an instrument of torture, the food contains disgusting things or human flesh, etc. Phonemes like the following are produced by somatopsychical perplexity: that the rectum is grown up, the body full of feces or changed into a solid mass, the heart has stopped, the blood does not circulate, that the patients are paralyzed or dead, that the head is separated from the body or changed into an ape's, that the arms are pulled out or many times longer than formerly, or instead of two arms there are five, etc. Motor perplexity is very often clad in phonemes. This is the most evident when the patients hear perfectly contradictory commands, *e. g.* eat and do not eat. Also the command to take a certain position, to keep the tongue far protruded, to walk on all fours like an animal, are hallucinated assertions of motor perplexity, and also when the patients hear that they can not swallow, speak, touch the hand. Finally a great part of the so-called impulsive actions, but in reality caused by phonemes, have to be explained in this way. The patients hear the

command to escape, jump out of the window, throw themselves into the water, hang themselves, throw themselves on their head, pull out their tongue, mutilate the genitals, gouge out the eyes.

I limit myself to these examples, which I believe are sufficient evidence to show the dependence of the content of phonemes on the affects most frequent in acute mental diseases. I would only have to add, that in a certain respect the delusion of relativity depends on the affect state and refer as to this to my remarks in the thirteenth lecture. If these chiefly relate to the delusion of relativity in the baroniac states, it is at once comprehensible that in the acute psychosis the delusion of relativity has a still greater affective color. It is especially the satisfaction of the demands of Nature in taking food, relieving the bowels and bladder, which in the acute psychoses cause the occurrence of phonemes with the content of the delusion of relativity, and especially frequent of disorientating phonemes, which are clad in the tone of voice of the person chiefly concerned, then of the attendants or physician. Taunts and twitting remarks naturally predominate, as *e. g.*: "now he eats again," or: "he can eat well, but not work."

It is very probable that not only the phonemes, but all hallucinations show the conformable dependence on the prevailing affect which we have become acquainted with in the phonemes. Still our experience greatly needs completion. It is the best known of visions that their content depends on the prevailing affect and that applies especially to melancholia and the psychosis of apprehension. Corresponding to the prevailing dejection corpses, coffins, uncanny black forms, funerals or in more fantastically colored cases the destruction of relatives by falling buildings, by flood, by railway accident, etc., are hallucinated; usually at least in more shadowy form with the support of this standpoint it is a matter of visions. That the visions of the ecstatic corresponding to their religious feeling of happiness, relate to heaven, and that it is here often more a matter of dream-like hallucinations than of visions, is readily comprehensible after what has been said.

LECTURE TWENTY-THREE.

Presentation of a Case of Psychosis with Apprehension. Form of the Disease, Course, Diagnosis, Prognosis, Treatment. Separation from the Neuroses with Apprehension. An Example of Psychosis with Hypochondriacal Apprehension.

The patient Sch., whom we have here, has objected to coming to the auditorium. He looks about anxiously, slowly comes nearer, but then greets me as an acquaintance. We have a man of 55, large, vigorous physique, in a state of lowered nutrition, with somewhat cyanotic color of the face and hands, cold extremities, anxious in manner and facial expression. A low moan is repeated rhythmically and now and then interrupts his talk, while he shows a great desire to speak. He looks grieved when I interrupt him to make explanations. He answers correctly my questions as to age, domestic relations, his home, business, but it is noticeable that his affects make it hard for him to concentrate himself, that he pauses, when he looks about vacantly, and that therefore the answer to simple questions, which otherwise is prompt, often requires a longer time. Patient repeatedly admits that it is hard for him to collect himself. The impression we gain of the affect controlling the patient is that of confusion, anxiety and perplexity. That these states of affect render difficult a coordinated train of thought has long been known and repeatedly demonstrated. On inquiry we learn that the patient complains of constant anxiety. Seat of the anxiety in his heart: "it will crush him". He can not breathe and therefore has not slept at night. Consequently he wishes me to examine him and prepares to undress in his anxious, hasty way. To the question why he is so anxious, he says the fear of being beheaded; he has also heard he shall count fifty daily, he is presumed to eat biscuits which have been in an expectoration cup of another patient. On inquiry we hear that the other patients, who are in the same room with

him, have made these assertions. The patient is well orientated and knows he is at the Clinic for insane. Still he does not thoroughly comprehend the present situation, so it might be that the patient has previously had somewhat limited conceptions, as we frequently find in the country people of this region. He recognizes me, recognizes the audience to be students and thinks I give them instruction, but still believes the gentlemen will all become preachers like his son, who is a student of theology and accompanied him to the Clinic. In the ward the patient has claimed they will cut off his head, he will be taken to the morgue where the corpses are. Besides it is not merely the fear of the threats which control the patient, we hear many complaints as to the fate of his family. He believes he has lost all he has; his son will be unable to study any longer. He has heard the voice of his little son say: "we have had nothing fit to eat for three weeks," the patient has also seen his son standing before him with supplicating gestures. Patient believes his family must die of hunger. The children are all sick, his son, the student, has been refused by a life insurance company owing to a heart trouble. He is to blame, he has ruined himself by an immoral life and secret sins in his youth. He has been too corrupt. He has also injured himself by chewing too much tobacco. Patient tells of an assault in which he recognized one of the assailants and has made a complaint. He then probably perjured himself, for it had been in the night and he could not have seen plainly enough. Formerly, when the anxiety was still greater, the patient had complained that both his younger children had been poisoned, had taken the life of his wife. At this time the patient, who has a hernia, had eaten poorly and claimed he had pains in his abdomen from eating.

Except the hernia no organic disease is to be found, he looks in no way older, but younger than he is. The patient has now been at the Clinic something over a month and sick for about three months before. The external cause of his disease was said to be that the patient, owner of a blacksmith shop and a farm adjoining, sold this

property and the shop to put himself at rest. Although the business was profitable and went smoothly, the patient gradually got the idea he had ruined his family and became poor. Anxiety, self-reproaches, which referred to the fancied perjury and the idea he is a great sinner and persecuted by Satan, were gradually associated. These ideas of autopsychical anxiety existed alone in the early part of the disease, and shortly before admission those of the fanciful menace were added, simultaneously such an aggravation of the anxious restlessness (anxious motor impulse) was noticeable that commitment of the patient to an insane hospital was unavoidable. Here the patient seems to have attained the crisis of his disease and now to have passed it. This is indicated by the subsidence of the ideas of somatopsychical anxiety. Besides a manifestation, the patient's rhythmical moaning, which is now only intimated, was much more pronounced in the early part of his sojourn and at times was increased to a monotonous repetition of one and the same phrase (I poor sinner). This was sometimes accompanied by rhythmical movements of the arms. The anxiety seems to have reached its highest point about this time. Nutrition was impaired only at the time the ideas of somatopsychical anxiety occurred, sleep must usually be induced by hypnotics. His weight fell from 78 kg. at the time of his admission to 72 kg., its present condition, while the amount of food taken has usually been sufficient.

With regard to the prognosis we are justified in calling it favorable on the basis of the course and other data. The course is seen to be of acute onset, then an exaggeration of the symptoms for a period of about a week, during which parakinetic and hyperkinetic symptoms in form of verbigeration and rhythmical movements of the arms occurred. This period corresponded to the height of the anxiety and the occurrence of ideas of somatopsychical anxiety. Since then the independent motor as well as the hypochondriacal symptoms have ceased and the anxiety lessened in intensity. Delusions of relativity and disorientating phonemes of corresponding content are not intense. Thus the intensity of the fundamental phenomenon, the anxiety, accords with the

extent of the symptoms; the disappearance of the symptoms is to be expected in similar order.*

The form of disease described is typical of a large series of analogous cases, only a few slight deviations must be excepted, which prevent the case from appearing perfectly pure. Perhaps it is a matter of the peculiarity of the individual, as I intimated. In general it can not be denied that the elementary symptom of anxiety affords the exclusive basis of a type of disease, which in many instances presents no other symptoms than those to be traced to the anxiety. We can put all these cases under the term *psychosis with apprehension*. The fundamental symptom is the anxiety, which is most often located in the breast, especially in the heart and epigastrium, next the in head, then in the whole body and always of a fluctuating character, intermitting at the onset or decline of the disease. This anxiety induces certain ideas, which therefore deserve the name of ideas of anxiety. They are so shaded that the ideas of autopsychical anxiety correspond to the lower intensity of the anxiety, the allopsychical and somatopsychical to the greater intensity. The somatopsychical may sometimes be absent or, as in this case, appear only at the time of the crisis of the disease. At the onset and the decline of the disease ideas of autopsychical anxiety are usually alone present. In many cases it consists wholly of ideas, far more often the ideas are clad in phonemes. At the height of the anxiety hallucinations of the other senses may occasionally occur and in certain very acute cases, as *e. g.* in the attacks of anxiety described of epileptics, combined hallucinations in all the senses. The condition is so frequent that usually only ideas of autopsychical anxiety of moderate intensity exist, or a combination of ideas of autopsychical and allopsychical anxiety, and phonemes only occur at times of increased anxiety. The allopsychical orientation is retained, the autopsychical usually altered permanently in the way of micromania. The perplexity may be extended to the allopsychical domain. Indications of delusions of relativity are often

*Three months after the demonstration the patient was actually well and has been so for two years.

met with at times of intense anxiety, disorientating phonemes of this content also occur. The content of the ideas of autopsychical anxiety and corresponding phonemes is solicitude about the relatives, the financial condition, injury to personal honor, micromania, self-accusations, consequently insulting phonemes. The content of the ideas of allopsychical anxiety is usually that of menace to life or honor, abuses, etc. The delusions of relativity behave in the same way. Of the hallucinations associated with especially intense affect, those of taste and smell are to be mentioned in particular, because they are usually regarded as the effects of poison and induce a temporary refusal of food.

Of etiological factors, alcoholism, epilepsy, the climacteric and senility seem to be closely related to the psychosis with apprehension.

With respect to the course of the psychosis, it may last from a week to several months. The shortest course is observed in abortive cases in epileptics and alcoholics. It sometimes happens that delirium tremens is replaced by an acute psychosis with apprehension of a very affective stamp with pronounced ideas of autopsychical anxiety. The psychosis is then of correspondingly short duration and accompanied by tremor and the symptoms on the part of the projection system to be discussed later. The psychosis with apprehension quite often occurs symptomatically, especially in heart defect with deranged compensation, when its course in point of time generally depends on this condition.

A real paranoiac stage does not generally occur, except consciousness of disease may be wanting for a long time.

The patient's motor state is generally determined purely psychologically by the affect of the content of the ideas of anxiety and hallucinations. The majority of patients can usually be treated in bed, still the exaggeration of the anxiety causes a certain motor restlessness, chiefly expressive movements of anxiety like crying, sobbing, wringing the hands, kneeling, praying, according to the individuality. In many cases tremor, grinding the teeth, pro-

fuse perspiration occur. If the anxiety is still further increased the patients get out of bed, walk about restlessly, try to get away. Motor manifestations not psychologically induced, or at least on the boundary of motor symptoms, are generally rhythmical moaning or swaying of the trunk, most often the two together, finally the monotonous, if not rhythmical, yet repeated movements of the hands, pulling at the bedding or clothing, rubbing the hands together, etc. The tendency to suicide is almost always pronounced, as well as the desire to die is often manifested in expressions like: "Put an end to me. Strike me dead." At the crisis of the disease the motor symptoms just described or those still more pronounced readily occur, particularly a parakinetic condition by rhythmical movements and verbigeration. On the other hand a state of allopsychical disorientation and an exaggeration of the sensorial symptoms to fear of everyone and blind defense.

Melancholia agitata so-called deserves to be expressly mentioned as a special form of the psychosis with apprehension. Motor restlessness is constantly very pronounced, the movements are not wholly, if largely of psychological motive,. they are in part, as above described, on the boundary of real motor disorder. But it is especially striking, that the increased production of ideas of anxiety may lead to impulsive talking and flight of ideas, symptoms, which we will meet later in an entirely different form of disease, but whose sensorial derivation here is not to be mistaken. It seems to be peculiar to these cases of agitated melancholia that the ideas of autopsychical anxiety predominate largely, if the allopsychical are never entirely absent.

Diagnostically it is to be first observed, that the disease often develops further and only forms the initial stage of a more complicated form of disease. This further development occurs in two ways, namely in form of a complex motor psychosis, usually characterized by the addition of akinetic symptoms, and in form of a more diffuse sensorial psychosis with disorientation. In the latter respect a suspicion must always arise, whether disorientating phonemes and delusions of relativity are more than incidental factors in the disease type.

The further development may be effected very quickly, so that the most acute forms of disease like those of the transitory psychoses so-called result.

For the diagnosis from affective melancholia the evidence of ideas of allopsychical anxiety or delusions of relativity is decisive. From acute hallucinosis the diagnosis is generally easy. The dominating symptoms of anxiety, according to the patient's statements, are objectively conspicuous, the frequently observed dependence of the phonemes on the variations in the anxiety, are most characteristic. But it is equally characteristic, that acute hallucinosis very early develops a paranoiac stage, which is not true of simple psychosis with apprehension. The retained allopsychical orientation distinguishes the simple psychosis with apprehension from delirium tremens tinged with fear. Likewise general sensorial psychoses are usually accompanied by disorientation. In many instances therefore the psychosis with apprehension is not to be differentiated from progressive paresis, because from the clinical standpoint the occurrence of a paretic psychosis with apprehension must be admitted. During the affect it is often hard to establish the disorder of memory, judgment and the ability to attend, almost always demonstrable in paresis, on the other hand the possibility exists that the symptoms in the projection system decisive for paresis—or alcoholism—are absent and first appear later in the course.

Cases of disease are very often met with, which may be called *borderland cases* or mixed cases of *psychosis with apprehension and affective melancholia*. They are characterized by the fact, that neither one or the other form of disease can be demonstrated pure or complete. From the external appearance the picture of affective melancholia usually predominates, especially because the fluctuations in the anxiety are less pronounced and a more continuous, stationary type of disease prevails. The subjective insufficiency of affective melancholia is often wanting, while pronounced micromania, self-accusations and other ideas of autopsychical anxiety are present. The prevailing affect is

that of misery, but also a localized anxiety. The manifestations of anxiety are usually limited to the simplest expressive movements, like those of crying, sporadic outbreaks of despair, while a motor restlessness is generally wanting. Ideas of allopsychical anxiety are almost always demonstrable, but they are sporadic, recede greatly in their importance and must often be sought for. Likewise, wholly sporadic delusions of relativity occur. The idea of misery prevailing among those of anxiety are often confined to a circumscribed group of ideas as in pure melancholia. The phonemes are subordinate factors.

Thus the quite frequent form of disease is sufficiently characterized in both ways. It seems to occur preferably in very young persons and in old age. The diagnosis is therefore not unimportant, because the prognosis of this disease is not only to be made with more certainty than in the psychosis with apprehension, but it is by far more favorable. The cases of the kind I have known have all terminated favorably.

The *prognosis* of the psychosis with apprehension is to be called favorable, for in by far the greater majority of the cases above described recovery has occurred. This favorable opinion is modified by the difficulty in making a certain diagnosis until a greater part of the course of the disease is past. When, as in the case presented, the crisis of the disease is past, it may be assumed with some certainty that a transformation of the disease into one more complicated will not occur, and in this expectation one is sometimes deceived, for after a stage of apparent convalescence, a further development of the psychosis into a progressive course may occur. So it is *e. g.* in a case of senile psychosis with apprehension in a woman of 73, whom I could present after a course of 1½ years, as a typical example of a chronic case with hypochondriacal delusions of persecution in the stage of allopsychical disorentation*. In this case the form of disease was unfavorably colored by numerous disorientating phonemes and delusions of relativity.

*See case 1 in "*Krankenvorstellungen der Breslauer Psychiatr. Klinik,*" Heft 1.

The *treatment* of the psychosis with apprehension has the special task of combating the symptom of anxiety. To simply bear intense anxiety for a long period can not be expected of any patient, just as little as the analogous symptoms of pain. In general extract of opium, in doses of ½ to 2 dcgr. subcutaneously, is a reliable remedy. Next a combination of hyoscine with morphine, and of the first half of as many milligrams as centigrams of the latter, is of value. The dose may be daily increased from ¼ mgr: ⅓ cgr. to ½ mgr. : 1 cgr. In the paroxysms of anxiety in epileptics, a hypnotic dose of amyl hydrate internally, or by clyster, is preferable. The further treatment of the psychosis with apprehension presents no other problems than that of psychosis in general, and therefore I refer you to my remarks on this subject at the conclusion of these lectures†.

No other province of mental disease has so many points in common with the functional neuroses as that which has just received our consideration. As frequent as the psychoses with apprehension are, it is incontestible that the states of anxiety, which come within the domain of the neuroses, are generally far more frequent. The question then arises: are there certain criteria for differentiating a *neurosis with apprehension* from a psychosis with the same affect? This question is of great practical importance, for with the psychosis with apprehension it is the physician's duty to assure the patient's safety by commitment to an insane hospital, even against the patient's will. Such interference with the personal liberty of a neighbor would by no means be tolerated in a mere neurosis. Fortunately the type of disease above described presents in its complex of symptoms such certain signs readily recognized, that the positive diagnosis of a psychosis with apprehension is easy and thus a doubt as to the correct method of procedure is obviated. Still unquestionably there are here, as everywhere in Nature, borderland cases, in which doubts as to the propriety of such a vigorous measure are justified. It will then be the phy-

†The reader finds examples of psychosis with apprehension in cases 3, 8, 9 and 12 in the first part and 5, 21, 22 and 23 in the second part of the "*Krankenvorstellungen aus der psychiatrischen Klinik in Breslau*," Breslau 1899.

sician's duty to provide for the greatest possible security and supervision of the patient in private. There is no better means for this than bed treatment, carried out strictly. But then, as above stated, the symptom of anxiety itself will have to be treated. The patient's welfare is always paramount to all other considerations and therefore the practical consequences, which the patient derives from his feeling of anxiety and the associated ideas of misery and anxiety on his action must be clearly kept in mind. Always remember that a single symptom, like anxiety, never suffices to diagnose a psychosis, but that on the other hand to the patient's actions equally as much value at least is always to be ascribed as to what he says. When suicidal attempts occur the patient's safety, by commitment to an insane hospital, is unconditionally demanded in these borderland cases.

I have begun the description of special disease types with the psychoses with apprehension, because on the one hand they are cases relatively easy to understand, on the other their points of contact with many other acute psychoses are so numerous, that they soon lead us into the midst of our practical problems. I scarcely need say that the practical knowledge of mental diseases has nothing to do with theoretical hypotheses. Therefore our method of demonstration will be essentially governed by the purpose of instruction and this subordinated to the practical requirements. The patient I now present belongs in this practical sense to the psychosis with apprehension, but, as will soon be seen, brings us to the subject of our next lecture.

The working woman L., 69, as is seen, a white haired woman, walking somewhat stooped with depressed slightly anxious facial expression and corresponding manner. She answers questions promptly, if in a somewhat feeble voice. She tells us her birthday, the date of her marriage, how long she was married, the date of her husband's death and his illness, gives the names of her children, tells us of her only living daughter and her marriage, speaks of her grandchildren. We learn from her all the prior history of her dis-

ease. In the spring of 1896 she became ill from a tumor in the body, which was then operated on. She then spent eleven weeks in the hospital, was very weak afterward, but well otherwise. In November she had the shingles and could sleep hardly at all for three weeks. Early in December the present trouble appeared. The time of her stay at the Clinic—since February 24th of this year—she states nearly correct, shows she is thoroughly orientated as to the purpose of the institution and her fellow patients, knows that the gentlemen present are students who visit the Clinic. I present her to speak of her disease. What is her disease? She can eat nothing because her throat is grown up or, as she corrects herself, only a very little passes through. The tongue has grown to the roof of the mouth. She feels with her hand and demonstrates that the upper surface of the tongue touches the roof of the mouth. Besides she constantly has the taste of pitch in her mouth and what she eats has no taste. What she swallows with difficulty she feels sticking in her throat. It accumulates in the stomach and causes a feeling of tension. Formerly defecation has not been possible, and now only occurs through artificial means and insufficiently. I ask if she is not somewhat better, but she replies in the negative. Still I must remark that the patient has actually improved. She was formerly so weak and infirm, that she replied in a very low, feeble voice and a demonstration like to-day would have been impossible. Owing to her feeling of severe illness she then did not speak of herself at all, while she does now occasionally, and took no part in what went on about her, while she now shows some interest. She then stated that her esophagus was completely grown up and had to be fed by force, while she now takes some food spontaneously. We have further learned from her daughter, that she previously complained that she could not get her breath.

What her disease is the patient is unable to say definitely, still it is something very bad, entirely hopeless. She has formerly said it is the pest and that she feared infecting others by contact. In this respect she has surely improved, for she does not think so now.

If we ask the patient how she likes her treatment here she replies: good, she is not worthy of it. What has she to reproach herself for? She is bad and sinful through and through, has tried to take her life, is a fright, a spectacle before persons and deserves to be thrown out. The other patients cry on her account. She has brought her sickness on herself by not eating, she has not treated her mother properly in her last illness. As a further sign of fanciful micromania I will still mention, that the patient refused to go into the reception room, because the other patients will not look at her, and has said, when preparations for photographing were being made, the photographer would be so shocked by her appearance that he would fall dead. Further the patient is convinced she cannot die, because she is too bad. She now expresses the desire to die and before her admission tried to strangle herself twice, because she could not bear it so. The patient believes her grandchildren are very sick, perhaps dead, and she formerly expressed the idea they would die on her account. As she then claimed to be to blame for all the misfortunes she heard of, *e. g.*, when an acquaintance burned his hand. She likewise expressed the fear she would not be admitted to any hospital, because she is too bad. Although the patient gives systematic information and presents no external signs of anxiety, she still admits on inquiry to have anxiety constantly. Where is the anxiety located? In the head. The anxiety is distinctly differentiated from the anxious feeling in the epigastrium, according to prior statements the anxiety was sometimes located in the breast. With respect to the patient's conduct on the ward, it is stated that she has always been affable and trusty. She has always been tidy and only occasionally disturbed; owing to her delusions she pulls at her anus or handles her excrement.

Other symptoms have not been found in the patient. Her delusions have always been confined to the pathological ideas described, to her body and her personality, and her conduct thus determined. With respect to the conception of the disease a review of its course is very instructive. It is unquestionably shown, that from the onset the present

hypochondriacal troubles existed and that they gradually led to the patient's extreme emaciation—her weight on admission was 31 kg., hence the necessity of her admission to the Clinic.

The other pathological ideas first appeared at a certain height of the disease, after the isolated hypochondriacal complaints had existed for weeks. A test of perception and attention showed a normal condition. The information we have gotten from the patient has always been given in concise answers to the questions asked her.

WERNICKE (C.)

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OUTLINES OF PSYCHIATRY IN CLINICAL LECTURES.*

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LECTURE TWENTY-FOUR.

Intestinal, Ascending and Diffuse Somatopsychoses—Hypochondriacal Reflex Psychoses—Severe Hypochondriacal Psychosis in an Inebriate—Example of a Paretic Somatopsychosis—Form of Disease and Actions of Somatopsychical Perplexity—Terminations—Review of the Hypochondriacal Symptoms.

IN the patient recently presented you have an example of those cases occurring frequently, which deserve the name of *psychosis with hypochondriacal apprehension*. As is seen it is a matter of circumscribed intestinal somatopsychosis, depending on abnormal physical sensations in the digestive tract, which quickly lead to disorientation in a circumscribed and intestinal domain of the consciousness of the body. The attending feeling of severe illness is readily comprehensible as a sequence of the disorder of somatopsychical identification. Our patient called her mental state anxiety, but more often, in accordance with the paramount change in content, the patient says the affect is not real anxiety, but something different, especially those patients who are in possession of better expressions owing to their education. It is evidently a matter of that affect we have become acquainted with as physical or somatopsychical

* Continued from *Alienist and Neurologist*, Vol. xxxiv, No. 1.
† English by W. Alfred McCorn.

perplexity. Then further, an anxiety occurring in paroxysms, differentiated as something special, new.

Circumscribed intestinal hypochondria is preferably located in the vicinity of the two terminals of the digestive tract, accordingly as the difficulty in swallowing exists at one time, regarded in its broadest sense, so that the whole act of conveying food to the stomach is meant; again difficulty in defecation is the most prominent of the symptoms. In a case of the latter sort a rectal catarrh, which was maintained by hemorrhoids, could be ascertained to be the basis of the hypochondriacal ideas, and likewise a globus, which had existed previously, might in female patients often be the starting point of the other form, traceable to the subjective difficulty in swallowing.

As is perceived from such examples, the interpretation is unquestionable that it is a matter of a disorder of psychosensorial identification in the domain of organic feeling, but hard and often not to be established whether hyperæsthesia, paræsthesia or anæsthesia exists.

The two different initial localizations lead to the same result at a certain stage of development, to the feeling of being stuffed, in one mode of origin that the food, either swallowed with difficulty or artificially introduced, accumulates in the stomach, in the other, that masses of feces dam up from below, even to the throat eventually. The most common and important consequence of these pathological sensations is refusal of food, which in cases of the kind almost always renders forced feeding by the stomach tube necessary. A feeling of intense misery is always present, wholly comprehensible from the prevailing feeling of severe physical illness. Thus the judgment of the future is influenced: the patients always believe they are absolutely hopeless and lost. The real ideas of anxiety in the pure cases of the kind are confined to the autopsychical domain and within it are limited to the patients blaming themselves for having produced or aggravated their disease by neglect of medical advice or orders. In the case of an unmarried woman of 60, who became acutely ill with this form of intestinal somatopsychosis with persistent re-

fusal of food, after a prolonged period of nursing, combined with depressive affects. The abnormal sensation in the throat ceased after the disease existed about six months, but the feeling of misery and the ideas of autopsychical anxiety of having no bowel movement, and the disease finally terminated fatally.

With regard to the motor condition in this disease, it is wholly of psychological origin in the pure cases. Perhaps it is due to individual variation, that in one patient more of an agitated character, outbreaks of crying and despair, lamentations, wringing the hands is more observed, in another a loss in motility to a moderate degree, as we find it explainable by the feeling of severe illness. This condition can either exist in like manner during the whole course of the disease, one condition replace the other, or the agitation corresponds to one or more of the highest points of the disease curve. Inversely an extreme loss in motility, in other words an intrapsychical (psychosensory) akinesis may correspond to an increase in the extent of the symptoms, and I have observed this, *e. g.*, in a case of *ascending* intestinal *somatopsychosis*. Here then the akinesis was the severer symptom, as it was then to be derived accordingly from an increase in the feeling of illness, for the patient was untidy and claimed to be unable to stand, walk or talk. These functions were actually retained, as might be established by incidental reactions.

It was a matter of a woman of 57, who for years had a hard struggle for existence and then became ill with the sensation of closure of the rectum. Six months later, at the time of the crisis of her disease, she was filled with masses of feces, could no longer breath, could not move. While at the onset of her illness she again manifested in despairing restlessness her fear of having to starve, after an intercurrent influenza she passed into the state of profound exhaustion described, in which she complained of the slowness and difficulty in thinking. An infiltration of both upper lobes seemed to make the prognosis absolutely hopeless, nevertheless, after remaining several weeks in the condition described, the patient convalesced and in about a

year could be discharged improved to family care. The disease curve in this case may be considered as purely extensive and the akinesis corresponded to the highest point of the curve. The case was interesting in that the cardiac oppression was always stated to be a separate symptom, and that ideas of autopsychical anxiety in form of self-accusations occurred only temporarily and by intimation.

More plainly than in the preceding case is the ascending tendency of a circumscribed hypochondria confined to the genital organs, shown in the following, which I have presented a few semesters ago. It is a Jewish girl of 23, who previously had several attacks of a psychosis, first of a melancholic nature, then more of a maniacal, and whose sister had twice been insane. She had lived in her brothers family and most devotedly cared for his seriously ill child. At the onset of her illness she complained of the feeling of a hard body in the genitals and was therefore treated by a gynecologist. It was accompanied with burning, tenesmus of the bladder and desire to urinate while menstruation was suppressed. An objective condition could not be constated. When the child died about two months later the patient began to take the hardest work on herself, nevertheless, she soon claimed she was worthless, could not work, was in the way and a burden on her brother. About two months later she attempted suicide by chloroform and was unconscious for several hours. A thwarted attempt to jump into the water about three months later was the cause for sending her to the Clinic, the patient having worked hard until the last day from micromania. In the last two weeks outside and the first month of her stay at the Clinic, her physical troubles increased to a very desperate condition. Patient stated that in consequence of insufficient defecation food collected in her and had been changed into a solid mass—not feces, as she expressly stated. This hard mass is forced into all parts of the body, the whole body is deformed by it, has become firm and hard, only the skin is still natural. Patient is convinced of this by the internal feeling of weight and she feels herself with her hands. The body seems to her dead and insensible, and as if no

blood flowed in it, although the patient feels her pulse and hears her heart beat. This numbness affects the sense organs also: she can hear with her ears, but her eyes are fixed in her head, she cannot move them or open the lids. When eye movements were executed at the examination, she maintained this is not true and she must turn her head instead. She is in doubt whether she can smell, feel, taste; she tries it with milk and then answers affirmatively. She can swallow and move the tongue. Patient persistently refused food at this time and had to be fed with a tube. She claimed that defecation was insufficient, even when injections or cathartics, which she takes willingly, have acted and she has felt relieved for the time. The feeling of the severest illness, absolute hopelessness in regard to her physical condition and a corresponding depression constantly exist. Still anxiety was complained of only temporarily at times of extreme excitement and despair, the feeling of anxiety being located in the breast.

With respect to the patient's motor condition, outbursts of despair ceased owing to progressive loss of strength. The delusion existed she had sinned by eating too much, she is eternally lost, deserves the severest punishment, which she longs for, *e. g.*, like being burned. Her detention at the Clinic—where she must of necessity be kept under observation—she considers deserved, if too mild punishment. Further her intellect was intact, orientation completely retained in spite of physical weakness, no retardation, hallucinations or delusion of relativity. With constant loss in weight, death occurred after nine month's stay at the Clinic.

Cases in which the pathological sensation is localized more in the air passages represent a not rare modification of the intestinal somatopsychoses. In a case of the kind the nostrils were the site of this pathological feeling, combined with the fear of suffocation; in another the feeling existed that the throat is dried up and the trachea closed, while swallowing and eating are unaffected and no dyspnœa exists. Nevertheless, a feeling of a heavy load, like a stone localized in the epigastrium, was felt so keenly that

the patient, a peasant woman of 42, called it a deathly feeling. It is said this feeling had gradually risen to the throat. The patient was troubled with an internal restlessness, moaned constantly and had the most intense suicidal tendency. Many of these attempts had been thwarted. At the time of observation she had been sick a year, and it was learned that in the first six months self-accusations and fears for her family existed in still more marked anxiety. Her hoarseness and occasional spells of coughing were the reason for examining the larynx; it was found that besides the catarrh, which caused the vocal cords to swell, one was completely paralyzed. Although the suspicion of a tubercular affection of the larynx must arise in the case, the paralysis of the vocal cord was evidently still unexplained, hence the question could be raised whether it must not rather be regarded as a direct sequence of the hypochondriacal sensation in the innervation of the larynx, in other words, an effect of the pathologically changed organic feeling in the organ serving motility, in the sense of my previous remark.* The possibility that the catarrh is merely a sequence of the defective innervation, then finally of the pathological sensation, was thus afforded. However, I admit that the one-sidedness of the vocal cord paralysis, contraindicated this explanation and another conception of this rare form of disease is more appropriate. Vocal cord paralysis and catarrh were perhaps the common consequence of a latent cause not demonstrable by examination, and the parasthesia of the organic sensation in itself pathological the starting point of the circumscribed intestinal somatopsychosis—then to be regarded symptomatic.

Much more probable than psychosensory akinesis in the sense of my prior developments is to be understood the occurrence of symptoms of paralysis in cases of circumscribed vesical hypochondria. These cases constitute the transition between hypochondriacal psychoses and neuroses, in that they encroach still less on the other mental functions than those previously described and may often dispense with institutional treatment, the more so because the nu-

*See *Alienist and Neurologist.* Vol. XXIII, No. 4, page 413.

merous subjective disturbances grouped with the paralysis of the sphincter, usually occur at certain hours of the day, but may be wanting at other times. Especially annoying is the feeling of the desire to urinate, combined in part with a tendency to pollutions, which may occur without erections. The patients are therefore in constant anxiety of being in distress, besides a feeling of anxiety localized in the epigastrium may exist. At other times than during the attacks the patients appear psychically normal, but in them they suffer from more or less pronounced ideas of autopsychical anxiety and a despondency which may cause weariness of life and the suicidal tendency. The whole mode of life is usually so regulated by these patients, that troubles of the sort cannot occur, hence business association with other persons suffer. In a case of the kind treatment by warm baths for many hours, in which the patient felt relieved of all solicitude of sudden distress, was successful for a long time. I need not state that these cases are characterized by the absence of any local change and all symptoms in the sensory nerves and spinal cord, while in the preceding a previous vesical catarrh or a gonorrhœa seem not to have been unimportant.

Approximately similar to the hypochondriacal neuroses are certain cases of defecation hypochondria, in which by regulation of the bowels, the chief annoying desire, like the anxiety with the sequela, is relieved.

The circumscribed intestinal hypochondria is occasionally found localized, as is not otherwise to be expected, in the female genitals. A typical case of the sort, which I have presented at the Clinic, is a servant girl of 22, who, until her illness, had been of normal intelligence, but always easily excitable and inclined to outbursts of anger, whose brother died insane. After anger she has repeatedly had attacks, whose form cannot be more definitely ascertained. At the time of her presentation she has had for nearly two years, if also with a few long intervals, a burning, not directly painful feeling, but described as wholly unbearable, in her genitlas and in the lower abdominal region. This burning was not continuous, but always soon returned. It

was worse toward evening and at times combined with pains in the sacral region, headache, vertigo and nausea. At the same time the patient complained of anxiety in the epigastrium. The disease was attended with a feeling of misery, profound depression, hopelessness and facial expression, as well as the whole apathetic conduct, corresponded to this mental state. At the time of the menses the troubles were less, sacral pains and some discharge occurred before and after them. The patient's motor condition deserves special mention. While she usually remained dejected and apathetic in bed, occasionally outbursts of wholly unreasonable and most absurd violence occurred, when the patient cries, strikes, bites and scratches, as well as totally mistakes her surroundings. The patient subsequently has no memory of these fits not lasting over an hour, they are always attended by an exaggeration of the abnormal sensations in the genitals, then the feeling occurred, like an aura, as if the body became numb and consciousness disappeared. We will not err if we regard these motor manifestations, which are of the stamp of senseless violence, as a sort of reflex from the intensely exaggerated organic feeling and hence as psychosensory hyperkinesis. At the time of observation had ulcers of the cervix and vagina. Her illness had obviously followed a confinement and subsequent metritis. Owing to these attacks of violence, the patient must be sent to a custodial institution. Although her symptoms reported so approximate the type of epilepsy, yet typical epileptic seizures have never been observed.

Except the cases of motor discharge just considered, which are to be included among the dazed condition of the transitory psychosis so-called, to be described later, a circumscribed intestinal somatopsychosis, and also emanating from the genital organ, is expressed in the case described. The close relationship of attacks of violence with those of epileptic and hysterical dazed conditions is admitted, but it does not prevent so regarding them that the constant abnormal intestinal sensation forms the starting point of acute transitory attacks, so that the latter appear in the light of

a reflex psychosis incited from the genital organs. In this transitory disturbance the identification disorder is then extended to all three parts of consciousness, but the motor discharge retains the character of the psychosensory condition and thoroughly bears the stamp of somatopsychical perplexity. This method of consideration has the advantage of a uniform conception of the disease type. It is supported first of all by the fact that an exaggeration of the local disturbances always precedes the attacks of violence, but further by experiences in analogous cases. I have observed, wholly isolated, an entirely similar attack of violence in a girl of 20, who constantly had an intense feeling of misery with suicidal tendency and, once when she gave up her reserve and expressed herself, gave with all definiteness as cause of her condition, pains in the lower abdomen. These pains were in general of a fluctuating character. In the frequently recurring exacerbations of several days, they were described as convulsive, located in the region of the uterus and parametrium, combined with a terrifying feeling of anxiety ascending to the heart and appearing with ideas of incurability and suicidal impulse. Patient cried and moaned loudly and supervision necessary from her outbursts of dejection. Verbal suggestion once had a calming effect, more often chloroform must be resorted to. Fanciful names for the disease were wholly wanting. The objective condition of the genital organs led to the conclusion of prior masturbation (erosions of the vulva and vagina, with slight catarrh and bladder trouble). Further there was slight retroversion of the uterus and obstinate constipation. Sleep and nutrition were greatly impaired constantly. The patient, saleslady in a confectionery store, was the daughter of a father of unknown parentage, and was admitted to the Clinic after a severe hysterical excitement caused by a quarrel with her chief, in which she struck out blindly and cried fearfully. After six months she was transferred to a custodial institution, as a permanent improvement was not to be attained. The attack of violence observed by us occurred about the middle of her stay and was said to be caused by anger. Here, accord-

ing to my opinion, it would have been necessary to interpret differently the brief transitory psychosis, rendering prominent the rest of the picture than in the preceding case, moreover, the motor discharge corresponded to a diffuse somatopsychical perplexity. Furthermore, the patient was discharged from there recovered after six weeks, in consequence of the powerful impression which the transfer to a custodial institution must make on her.

That the sense organs may be the cause of pathological organic sensations and thus circumscribed hypochondriacal or somatopsychosis, is shown by the following instructive case: A woman of 71, physically vigorous, who until nine months ago had taken care of children and, on careful examination presented no signs of weakened intellect or senile mental disorder, voluntarily sought admission to our Clinic, because she feared she might commit suicide. During her stay at the Clinic of over four months she always presented the same symptoms, until the period of improvement preceding her discharge. On admission, moaning to herself, owing to anxiety in the heart. Chief complaint, a roaring in the head. The roaring is constant, increases in perfect stillness, so that the patient preferred remaining on the somewhat noisy admission ward. Subjectively this roaring is extremely unpleasant, gives her no rest, disturbs her thoughts, engages her attention. When the roaring is bad, uneasiness in the heart and anxiety occur at the same time. Feeling of intense misery, hopelessness, ideas of autopsychical anxiety, with the content of self-accusations, which she at the same time repudiates, insomnia, anxiety about the stillness of night, when the roaring increases, thoughts of suicide. Intelligent face, no defects, ability to attend good. Patient takes care of herself, sleeps on hypnotics. According to the patient's statements, this condition has slowly developed for four months. At first only roaring in the ears, for which she consulted different aurists. Then uneasiness and anxiety in the heart. Patient ran about here and there and could no longer occupy herself. Finally took too little food intentionally and suicidal ideas. The condition was always

worse in the evening, which was confirmed at the Clinic. She eat well at the Clinic and during the last two months increased in weight from 52 to 55 kg. The results of testing the hearing and examination of the ears were interesting. Old changes in both ears, retraction of the tympanum, left more than right (old otitis media). On admission whispers understood at 3-3½ m., stated further that the hearing was better or worse according to the intensity of the roaring. The first two months perceptible decrease in in the acuteness of hearing. This is manifested in ordinary conversation, in whispering the acuteness of hearing falls to 30 cm. on the left, 20 cm. on the right. Very poor bone conduction is also found, the watch is not heard on the head or mastoid process. An improvement in the psychical condition in the last two months was coincident with the favorable effect of treatment of the ears by Politzer's method. On discharge the roaring was still present, a moderate feeling of illness and worry about the return of the old condition existed, but the anxiety, the feeling of misery, the self-accusations and suicidal ideas had disappeared. Patient heard whispers with both ears at 5 m., also the bone conduction seemed improved, if worse on the right side than on the left.

One of the most remarkable cases of diffuse acute somatopsychosis, affecting the external configuration, I will try to describe from notes at the time of my connection with the insane department at Charite. The laborer, N. 46, was admitted December 6th, 1876, to the insane department as delirious. He had been admitted to one of the other wards on March 8th, of the same year, and after three days transferred to the delirious ward, but was discharged recovered on March 31st. The little data of this time seemed to render the diagnosis of delirium tremens doubtful, while there is much that indicates he had severe hypochondriacal disturbances (semen flowed from him constantly, burning in the mouth, the larynx is removed), and besides marked tremor and other objective signs of continued alcoholic excess, among others the well known hallucinations of sight. His restless conduct, again called delir-

ious, was the cause of his re-admission. Perfect allopsychical orientation and memory of the previous sojourn, only moderate use of alcohol said to have preceded. Deeply wrinkled, sorrowful face, with anxious, nevertheless occasionally smiling expression, anxiously accelerated respiration, no tremor of the hands, only slight tremor of the tongue, constant moaning and muttering. Hypochondriacal ideas: His brain is congealed, he cannot speak, the jaws were so loose, the throat is torn, the tongue has grown fast and it seems to him he cannot hear. These assertions often, without apparent affect, in a quiet, conversational tone. Sometimes does not respond, although spoken to loudly, again to whispers, then says: "He can hear, but there seems to be no tension in the ears," and then puts his fingers in the external meati. Says his head aches. Protrudes the tongue after he has claimed he cannot. He now states anamnestically that it had seemed so strange to him for some time, but he had officiated as house servant to the last. Pupils quite small, equal, dilate only a little when shaded. Claims to have no face, the head is almost like a stone. Other complaints: the rectum has been torn out, the head is on wrong with the face backward. Similar complaints changing in their content, which were temporarily corrected during the whole duration of the disease, while the delusion of the perverse position of his head is conspicuously fixed. Apparently no hallucinations, only at first accessible to consolation. Gradual refusal of food, because patient had no stomach, could get no air. Forced feeding necessary. Sleep to be obtained only by hypnotics. Extremely peculiar motor conduct during the whole duration of the disease. At one time the patient used the side rails of neighboring beds, separated by aisles, to walk on like the rounds of a ladder, then standing up in bed he let himself fall out backward, again threw himself out forcibly while turning his body, usually for the reason his head is on wrong. His moaning is often so annoying that he must be secluded, at other times strikingly calm, even peculiar smiling manner in narrating his troubles, often monotonous reproduction of former experiences resembling verbigeration:

"N., will you stay here?" "No, Sergeant Major," what the patient explains, that he had been a non-commissioned officer and now greatly regrets having refused the demand to surrender. Often insists in hiding himself in a corner, singing to himself similar experiences, as that above cited, never real motor symptoms. Gradual resistance and blind opposition to everything, strong clothing necessary, filthy, loss of strength. Many injuries from the movements above described, violently pounds himself in the face with his fist, etc. Finally alternating with refusal of food or simultaneously with the assertion of not being able to swallow, animal-like ferocity toward the food offered, so that there was danger of being bitten, and swallowing the food unmasticated. After a restless night, sudden calmness and death from exhaustion on May 4th, 1877. The autopsy showed besides a very marked, almost untearable thickening and clouding of the pia of the convexity, internal and external hydrocephalus, as cardinal lesion numerous encysted trichinia in all the muscles, but particularly in those of the neck. In the supraclavicular region beneath the deep fascia, an area infiltrated with pus, not sharply defined and about the size of a pigeon's egg, which apparently corresponds to a suppurated gland, and continued upward in the deep muscles of the neck to gradually disappear. Viscera unchanged other than signs of general marasmus.

The manifestations of somatopsychical perplexity displayed in this patient's conduct were so peculiar that they are indelibly stamped on my memory. They are evidently rendered in part comprehensible by the autopsy, and we may especially assume an inner connection of the suppurating focus in the deep muscles of the neck, with the peculiar leaps often endangering life, by which the patient tried to correct his fancied malposition of the head. We shall be justified in regarding the fundamental psychosensory identification disorder as a pathological (psychotically induced) paræsthesia of the sense of position of the head.

The change in the external configuration of the body is met with a no less instructive case I will now briefly outline. It is of a former officer of 35, of noble birth and

strong organic taint. Depressed at times for three years past, for six months he had been in the sad condition in which I became acquainted with him. During this time has slept poorly, occasionally wet the bed, impotentia cœundi. Except an intimated ataxia while in bed, a questionable speech disorder and traces of a right facial paresis, no demonstrable symptoms of paresis, still an old infection admitted. Attention, memory, judgment particularly good, no fainting spells. Frequent deep inspirations. Feeling of misery, subjective incapacity for work, etc., according to his complaints. These refer exclusively to his body, which the patient says no longer feels right. It is changed, bulky, unwieldy, like a lump of dough, the nose has become a bottle nose, tongue and mouth swollen, patient cannot open the mouth wide enough, defecation entirely insufficient, patient is full to the middle of his esophagus, food and drink have no taste, taken only from a sense of duty, a pasty, slimy taste in the mouth constantly, neck and throat hot and dry, as if burned. A peculiar feeling of anxiety is spoken of. On continuation of these troubles the patient had to be sent to the insane hospital, owing to brutal assaults on his extremely sacrificing wife, and there died in a few months from rapidly progressive paresis.

The example cited of hypochondriacal psychoses or somatopsychoses may suffice to show that the individual cases are of a very different stamp. We will try to embrace the signs common to them all, to obtain in this way a differentiation from other psychoses. With respect to *etiology* we see that a demonstrable somatic affection quite often determines the content of the pathological identification disorder. Nevertheless, it may not here be a matter of the simple relation of cause and effect, for the same organic affections are observed numberless times without any form of psychosis resulting. Whereas, it may be permissible to regard these cases as certain examples of psychosensory paræsthesia of the organic sensations concerned. The old theory of changes in position of the colon as cause of mental diseases now seem comprehensible in a certain measure and even with the restriction just given, ap-

proaches the possibility of realization in the special case. The form of disease is always essentially determined by the psychosensory identification disorder of organic feeling, if it is often not to be more closely ascertained whether paræsthesia, anæsthesia or hyperæsthesia exists.

The *localization of the pathological sensations* is often wholly indefinite and diffuse, as *e. g.*, is especially frequent in the initial stage of paretic dementia, when a feeling of severe illness is ascribed to portentious, indescribable sensations in the whole body. Besides it may be very heterogeneous and affect almost all parts of the body, including the sense organs, but a pure somatopsychosis can then only be assumed, when the comformable change in content leaves the allopsychical domain intact or, in other words, the cause of these changes in content is not sought in the world. Those organic sensations then, which are more conformably combined, according to their content with events in the world as, *e. g.*, the sensation of piercing instruments, electrical shocks, contacts, etc., always exceed the bounds of a pure somatopsychosis, and no less the symptom of the delusion of somatopsychical relativity.

Whereas, the autopsychical domain is always more or less involved, corresponding to the affect state induced by anxiety or somatopsychical perplexity. The dejected, depressed state of mind, feeling of misery, hopelessness, ideas of autopsychical anxiety of the most diverse content are always to be met with. Phonemes are often conspicuously absent; when they occur they only serve to put the ideas of autopsychical anxiety and the somatic sensations into words. Explanatory delusions are usually, but not always present. From them the sensations obtain their fantastic explanation. Thus the concept of the mental disorder becomes accessible to the laity, as *e. g.*, when worms in the brain, a frog or bird in the body is complained of. Anxiety, with its favorite localization in the breast, head, the whole body is an almost never failing attendant symptom. The more pronounced it is, the more real ideas of anxiety are manifested, and it may so dominate that it is justifiable to set apart certain cases of somatopsychosis, as psy-

choses with hypochondriacal apprehension. Mrs. L.* recently presented, was an example. But these cases are well characterized by the absence of ideas of allopsychical anxiety and delusions of relativity.

The patient's *motor conduct* is psychologically comprehensible, at one time more agitated according to the sensations and feeling of somatic illness, again reduced to the verge of immobility, the linguistic expressions are analogous. The self-accusations resulting from the sensations claim special importance from refusal of food, suicidal impulse and actions of somatopsychical perplexity. Of such actions a few may be especially spoken of, for they must be of interest from their atrocity. They include pulling out the tongue, tearing off the genitals, tearing the orifaces of the body, gouging out the eyes, crawling into the chimney. What abnormal movements may arise from paræsthesia of the sense of position we have seen in the instance of the patient, N.†

It is an erroneous, if also authoritatively disseminated idea, that the boundary line between hypochondriacal mental disease and the hypochondriacal neuroses is thus given, that fantastic or explanatory delusions are wanting in the latter. The differentiating sign is here to be sought rather in the influence the hypochondriacal feelings have on the patient's actions. Patients, who from fear of committing suicide, come to the insane hospitals themselves, like Mrs. B., above described, without any fantastical explanation, will have to be considered insane, and likewise all those refusing food. But the exclusive concentration on the pathological feelings may condition an incapacity of the patient to engage in any occupation and to care for himself. The feeling that the lungs rub against each other in breathing, and acute attendant pains without objective lesion, forms the patient's chief complaint, who combines with it not fantastical explanation, but is wholly occupied by the intense feeling of illness and so rendered incapable of any employment. I am in no

*See *Alienist and Neurologist*, Vol. XXIV, p. 68.

†See *Alienist and Neurologist*, Vol. XXIV. Described in prior part of this lecture.

way averse to calling this example a boundary case between hypochondriacal psychoses and neuroses. But I must unquestionably call another case insane, in which a general deterioration in motility bordering on immobility, without any intellectual disorder, was induced by an unbearable itching in the intestines, and this not fantastically explained.

The psychoses with apprehension in pure cases, as well as the hypochondriacal variety and the other somatopsychical psychoses are relatively simple disease types, controlled in their whole course by the same symptom complex. Their disease curve may often be constructed as well from the intensity as extent of the symptoms, in which the affect of anxiety and the motor perplexity will be decisive for the intensive curve. Where the extent of the symptoms remains the same through the whole course of the disease, which is often the case in the circumscribed intestinal somatopsychoses, a purely intensive curve results. The cases in which an extension of the pathological feelings from a circumscribed region of the body to further organs is observed, present an extensive curve, of which the intensive may be independent. The relation of the two curves is perhaps decisive for the *prognosis*, in that an increase in extent without corresponding intensification of affect seems to be of unfavorable import. Besides the prognosis in all cases depends on the state of the nutrition, still only in the sense that the restitution of a certain weight forms the preliminary condition for the possibility of recovery and prevention of the lethal termination; in no way is a favorable course assured by a good state of nutrition at the onset of the disease. Life is always threatened. Termination in dementia is to be anticipated in the paretic and hebephrenic somatopsychoses, severe organic taint is then to be regarded prognostically unfavorable, when the bounds of the hypochondriacal neuroses are overstepped and unquestionable mental disease exists. Nevertheless, the acute somatopsychoses must, on the whole, be included among the curable mental diseases.

Whether a curable paranoiac stage occurs in the soma-

topsychoses, must be ascertained from further clinical observations. Whereas, the termination in chronic mental disorder seems to be quite frequent in cases whose acute character is induced more by the state of affect than by the duration.

I might very briefly mention a frequent combination of circumscribed intestinal hypochondria with the disease type of affective melancholia yet to be described. The hypochondriacal feeling, of which it is a matter, is usually intestinal, in women frequently arising from a feeling of globus in the sexual organs. These cases are entitled to the name of *hypochondriacal melancholia*, which is often improperly used and characterized by an absolutely favorable prognosis when the treatment is early, *i. e.*, within a hospital.

In accordance with our program I now pass to a brief description of the hypochondriacal symptoms, of which I ascertain whether they are isolated or combined with others, and whether explanatory delusions and other sequential symptoms are present or not. When functions of organs, which are normally unconscious, are perceived and accompanied by pathological sensations, we will have to regard them examples of psychosensory hyperæsthesia. Here belongs the digestive process of the stomach or intestines, after partaking food. This symptom increased from a slight feeling of discomfort to wholly fantastic derangements, is very often met with in insane and combined usually with the explanatory delusion, that poison is mixed with the food. An actual gastric catarrh is quite often the starting point of the pathological identification and leads to the complaint of feeling of weight, as though there was a stone at the pit of the stomach. The localized anxiety in affective melancholia may often be of this origin. The sense of burning, boiling, drawing, glowing in the viscera of the thorax and abdomen occurs frequently in insane. The heart is the starting point of numerous disturbances; it either beats too fast or too slow, seems to the patient to stop, the blood to stagnate in the veins. In a patient of Kalbaum's, a painful sensation in the heart was referred to

the sight of the fire on the hearth: the heart was burned out. Muscle pains are often the basis of a very intense feeling of illness, as several examples of rapid restoration by relief of the muscle pains proves. It also depends on hyperæsthesia when moderate muscular exertion, a in standing, walking and sitting, induces a feeling of great fatigue and thus the idea of loss of strength and hence the approach of death. The idea of having consumption and therefore of being about to die, may usually be traced to muscle pains in the thorax. It might be due more to intestinal feelings, when the lungs are said to be suppurating or gangrenous, in part a misconception of the expectorated pharyngeal and nasal mucous exists, often a corresponding hallucination of smell also.

The brain is an especially fertile source of hypochondriacal sensations. The idea is uncommonly prevalent that it moves in the skull, an overflowing or fluid, oozing, trickling feeling is described. Also the sensation that the brain is shriveled up, dried, that it glows, is corroded, is often stated. A crawling, creeping feeling is located on the brain surface and ascribed to little animals. The sensation that the brain substance is effected by external agencies leads to the idea of machines and persecutors. A patient describes different nerves which arise in the brain; he compares them to wax candles of different lengths and exactly designates the places where he feels them. A sighing, roaring, thundering is often expressly located in the brain, not in the ears.

The feeling of being hollow must depend on very curious sensations, in that the patients often expressly state that the food taken falls into a cavity! A patient expressed the idea that the diaphragm is broken through and the air at every respiration enters the abdominal cavity. These serious sensations are especially frequent in paretics.

It is specifically paretic when patients say that there are laborers in their brains, who do a certain work and send out loaded wagons, when patients claim to have a regiment of soldiers, a factory or a church in their body or a number of brandy casks under the skin. Whereas, the

statements of insane women of being pregnant, or of having just been delivered or of having a severe pelvic trouble, depend on certain normal sensations.

The changes in the external configuration are quite often felt. The cranium is very often said to be soft and yielding to pressure; again it is stated that the thorax has fallen in or is deformed, the shoulders not in the proper place, either too high or too low, the limbs are abnormally large or long. A young lady believed she was abnormally ugly and to have an ape's cranium. She roughly outlined its form with sagittal median eminences and claimed to recognize an ape's face in the mirror. A patient acutely ill claimed to feel the right leg on the left and the left on the right, another to have more than four arms of very different lengths. Another patient became acutely ill with attacks of the most intense somatopsychical perplexity and disorientation. Although held by several strong men, he could scarcely be prevented from gouging out his eyes with his fists. The hæmatomas remaining after the attacks, by which the uninjured bulbi were covered, showed the location of his worst sensations, of which the patient likewise had no memory. Whereas, in a lucid interval so called, he stated the worst thing in his seizure had been the indescribably terrible feeling of no longer knowing the relation of the trunk, head and limbs to each, which was above and below, right or left. A few seizures of the kind resulted in profound dementia. The patient of a family with strong hereditary taint, died in about a year from progressive paralysis. The idea of being abnormally small or abnormally large, is particularly common to paretics. The delusion of some physical transformation, *e. g.*, a woman into a man, or into an animal, seems to depend in part on the sensation of changed configuration of the body.

It is to be regarded as psychosensory paræsthesia of the senses, when the patients say they are dazzled and claim they cannot see. We have become acquainted with the insensibility to pain, *e. g.*, in the patient above mentioned, who pounded his face to demonstrate that he felt no pain. Pains of hypochondriacal origin are frequent in

the insane. They complain that they are prodded out of bed with pointed knives, that they are electrified, tortured, tormented, their limbs are broken, etc. The pains are often more definitely described as burning, glowing, boring, tearing, throbbing. Painful muscular contractions are explained by electrical shocks. A patient of Kahlbaum's complained: "Why do you dish me out so?" as she saw the attendants apportioning the soup. These are all undoubted examples of psychosensory hyperæsthesia of the general feeling. I have heard the statement from patients, who are in the habit of holding the head up from the pillow, bent forward when in the recumbent posture, that they had the feeling that their head fell backward. The maintenance of abnormal positions, which we will later meet with frequently in a certain class of patients, usually has its origin in an identification disorder of the sense of position. It may be the same with the so-called hypochondriacal paralysis, of which I remember an example of right hemiplegia with mutism at Charite. The autopsy of this case was negative.

The sensation of cohabitation, of which female insane very often complain, must be regarded as a complex sort of psychosensory identification disorder of general sensation. It is rarely possible to obtain a more definite explanation and it is then stated either the feeling of a hard body moving back and forth in the vagina, or it is a matter of a combination of hallucinations of the dream-like variety, in which tactile and general sensations unite in the whole act of cohabitation. A similar event is described by male patients as handling or grasping the sexual organs, and projected outward. The complaint of sexual indignity by male patients is very often heard.

Indefinite paræsthesias of general sensation, probably combined with abnormal muscle and organic sensations, are those of being drawn, *i. e.*, the whole body is drawn in a certain direction, a sensation which occurred in one patient as a reflex sensation, when he looked at the gas jet burning under the ceiling. Further, the feeling of swaying, being raised or falling, perhaps in part to abnormal identifi-

cation of the feeling of dizziness, further to the delusion of being able to fly. The latter idea was held for months by a case I observed at Charite, and led, among other things, to the awkward situation, that the patient climbed a tree in the garden and swung on much too weak branches, so that a dangerous fall seemed unavoidable. The employment of the fire hose only resulted in the patient changing his position and therefore it had to be abandoned as useless. But it all came out right, for the patient descended after being left entirely alone and the garden cleared.