that the changes that take place in the gastric mucous membrane converted the gastric juice into an entirely new compound, and that seems to Dr. Latham to be the case.

DR. E. S. TALBOT, Chicago, confirmed Dr. Latham's statement that more than fifteen years ago he commenced on this branch of research work. He laid down foundation principles and has been working all these years. It is not an easy thing, he said, to write an original paper. The research work has to be done along with the clinical experience, in order to reach certain results; but he has for years adopted this plan. He hints four or five years ahead, in some paper, at work which he is doing. Thousands of men have investigated the urine and thousands are still at work on it, trying to prove certain things. If Dr. Kirk, he said, has done any research work along the lines of work that he has followed, he will give him credit. There are thousands and thousands of different methods of doing urinalysis, and if Dr. Kirk has done work along this line, and if he can show any clearer evidence than he (Talbot) has shown, he will be glad to do him justice. The one who has done the original work should get the credit. The mere fact that a man is doing urinalysis, does not indicate that he is doing work along the same lines as another. In regard to the remark made by Dr. Faught, Dr. Talbot said that he has done a large amount of work on blood pressure, and has published articles along that line, and has read papers before medical societies as well as dental societies, showing conclusively that where there is a high degree of urinary acidity there is a high blood pressure, and when there is a high blood pressure these changes are taking place in the alveolar processes and in the pulps of the teeth. If such conditions take place in alveolar process, which is an end organ, and in the pulp of the tooth, which is an end organ, why should not other end organs be involved at the same time and under the same conditions? That is to say, why is there not interstitial nephritis as well as interstitial gingivitis. Dr. Talbot believes that the research work which is being done now by certain men will show that this great pressure that is put on the kidneys is the forerunner not only of Bright's disease, but also of heart failure, and that it produces a decay of the arteries. Dr. Pepper, he said, no doubt did considerable work on the degree of acidity. The subject of acidity of the system has been known in the medical profession for a hundred years or more. Physicians have treated acidity in a blind way, without knowing when to commence the treatment, how much to give and when to stop. Dr. Talbot shows, in his paper, a definite, positive method of diagnosis, and when to commence treatment, how much to give, and when to stop, and that is applicable, he said, not only to erosion, abrasion and interstitial gingivitis, but also to every disease to which human flesh is heir.

Physicians at work on this line of research, are getting absolute results. There is no question about it. It is definitely settled that this method of treatment is absolute and to the point. In regard to erosion, abrasion and discoloration, Dr. Talbot said that for more than eight years he has been treating his patients along that line and is getting the results, and every dentist in the country can do the same thing. It is simple and easy. It only requires a minute to make the urinalysis, and it can be done in the office.

Curability of Diffuse Septic Meningitis of Otitic Origin.—P. Laurens recently reported a case of otitic meningitis due to enterococci. The germs persisted in the cerebrospinal fluid after all the symptoms had subsided. The patient recovered after a spinal injection of a silver salt. In the discussion of the case at the Medical Society of the Hospitals, at Paris, Lermoyez urged routine bacteriologic examination of the cerebrospinal fluid in every case of suspicious acute meningitis. If polynuclears are found showing evidences of destructive action, the meningitis should be regarded as septic, and without loss of time a disinfectant should be injected into the arachnoid sac to sterilize the meninges before irremediable lesions have been induced. The meninges should also be drained by daily lumbar puncture. The subdural injection of the silver salt or other disinfectant acts on the meninges much more rapidly and intensely than in intravenous injection.

SOME GENERAL REFLECTIONS ON THE PSYCHOLOGY OF DEMENTIA PRÆCOX.*

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In approaching a subject with so broad a title, it is desirable, at the outset, to outline the limitations of my remarks. I can do so best by setting forth what, for the purposes, is meant by dementia præcox, and secondly, what I mean by its psychology.

I hold no particular brief for the term dementia præcox. As outlined and elaborated by the masterly studies of Kraepelin and his followers, it represents, for me at best, a fairly reasonable entity, so far as psychic combinations, viewed in the light of comparative biologic interpretations, can be conceived of as entities.

Without attempting to elaborate, it is taken for granted that mental disorders, like those of any other organ or organs, represent an adjustment of functions to compensate for, or to correct a disturbance, which has its origin either outside of the organ or organs involved, or within them.

It is an elementary fact that the chief functions of the nervous system are to adjust the relations of the organs of the body, one to another; and to adjust the individual to his physical and social environment. An impairment of the former we speak of in general terms as a nervous disorder; a disturbance of the latter is regarded, in a general way, as a mental disorder. Any wide variation in adjustment of the individual to his social environment, which serves no permanently useful purpose, is evidence, therefore, of disturbance of mental functions.

The gamut of individual reaction,¹ however, is extremely wide, and when it is taken into consideration how little we really know of the sum total of psychical variation, it may readily be seen how difficult it becomes to determine whether a distinct adjustment to a situation is one that is suited to the occasion or not.

Our knowledge of the sound and healthy psyche is still in a very primitive stage; but it seems that, so far as we have gone along modern lines of normal and pathologic psychology, a certain advance has been made.

With this confession of faith in our uncertainties, I can only plunge directly into the subject matter of our topic, and outline very briefly what the particular grouping of adjustments is that, in our present state of knowledge, has led to the conception of the dementia præcox group.

The most striking of these features consist in the following:

1. The occurrence of the reaction, for the most part, in the years about puberty, adolescence and early manhood, i. e., within the years 18 to 28. This simply means that the majority of patients thus far studied, fall within this period of life. There are plenty beyond both extremes, but this is perfectly understandable when it is realized that the development of individuals varies very widely.

2. The gradual development of a psychasthenic state which deepens into the sense of incapacity and in-

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Tilling (Th.): Individuelle Geistesartung und Geistesstörung, 1904.

adequacy, and is but the beginning of a deteriorating process which shows itself in various attributes of the individual's mental powers.

3. Thus a gradual emotional deterioration becomes apparent. This may be an indifference, or emotional stupidity, or may be characterized, as Stransky has so well shown, as an incongruity between the content of ideas and their natural emotional sequences. This incongruity has been compared to an ataxia by Stransky himself, and there may be more complete dissociation between ideas and their usual emotional association. This emotional adjustment, concerning which we shall speak later, is one of the very marked features of the reaction of these patients.

4. Modifications in the so-called intellectual sphere are apparent. While it is recognized that sharp distinctions between intellectual and emotional disturbances can be drawn only with the greatest of reservations,² certain changes in the precocious dement are better grouped under this head than under others; thus, lucidity of consciousness, which is so often involved, at times leading to complete confusion; variation in the power of attention, a veritable attention disorder, both voluntary and involuntary; some modification of the faculty of orientation, often not marked; delusion development, often on an hallucinatory basis; the loss of apperceptive power and the development of the sense of unreality, of inadequacy, ideas of influence, of reference, and compulsory ideation. These are some of the more characteristic features in the intellectual sphere.

5. As a consequence of these and a number of other reactions, the details of which I can not here enter into, there results a fairly constant and perhaps distinctive alteration in the character of the individual. Jung,³ in his most recent contribution to the subject of dementia præcox, thinks that we can speak of an "early dementia" character type, just as we can speak of an "hysterical" character. This is, I believe, to a certain extent true, and in a previous contribution on predementia præcox⁴ I have tried to state the problem of such a type of individual which, under the combined stress of heredity and environment, is unable to adjust itself along self-conservation lines, and failing such adjustment goes under. As already held in my former paper, it seems premature to make a hard and fast statement of this nature, yet at the same time I am convinced that the structural defects, which later permit of the crumbling of the intellectual structure, show in many individuals before the breaking down has begun.

Among the more constant and firmly established of the abnormalities of character are affectations, or eccentricities of manner; a tendency to search out striking combinations, neologisms in speech, bizarreness in writing, in artistic production, and unapproachability. The final development of the childish, foolish manner, so frequently seen as an end product, is best considered here perhaps as well. These affectations are particularly common in individuals of lower social strata.

Of the tendency to coin new expressions in conversation and in writing, I shall say something when I discuss the origin of these conditions. The unapproachability of these patients may vary very widely. Whether its development is a result of the disorder of attention, or due to emotional modifications, or to both, and other factors, is far from being certain.

6. Finally, these patients show marked modifications in their motor conduct, i. e., in their general muscular reactions, both in the striped and unstriped muscles. Physical negativisms, stereotypies, affectations of posture and of bearing, catalepsies, automatisms, and a host of sympathetic phenomena are included.

These are, I take it, the more fundamental of the anomalies which make one arrive at the conception of dementia præcox.

On a basis of variation in onset, in development, in the grouping, in intensity, and in persistence of these reactions, clinical psychiatry has erected certain types. Thus, those in whom the elements of early onset, slow advancing dementia, emotional deterioration, and attention disorder enter more slowly and persistently into the picture we speak of as examples of simple dementia, heboids, or hebephrenia. With the introduction of more stormy intervals of great restlessness, much automatism, marked violence with stereotypies, verbigerations, negativism, etc., the group term catatonics is sanctioned; while in the paranoid group, which Kraepelin has so carefully erected are arranged those who deteriorate very slowly; whose character changes take place only after years; in whom the emotional indifference and attention disorder are very slight for years, but in whom the exaggerations and egocentric delusional interpretations eventually transform the character, and the exaggerations and eccentricities may take on a fantastic and almost artistic finish by reason of the very slow decay of the intellectual functions.

As to the psychology. By this I mean simply the interpretations. If these are the features of the group, can they be explained in terms with which normal psychology has made us familiar? It is by means of a positive affirmation of this query that the belief in Kraepelin's generalizations has received so wide and almost universal a recognition.

The term psychology is here used in its widest and most general of senses, as meaning the physiology of mental functionings. I can not understand why, for instance, a modern writer on psychiatry—Bruce—in an introduction to a recent text-book, should say that psychiatry will advance only when we get away from psychologic interpretations. Apart from psychologic interpretations, how can psychiatry advance at all? Certainly the psychiatry of Bruce shows retrogression by reason of this very attitude. Out of the factors of the psychology of everyday life must be built up a knowledge of the mechanism of abnormal mental operations. Without such can we ever hope to gain any true grasp of the very essentials of mental disorders?

So long as symptomatology alone is considered, we are in the position of the internist who sees, for instance, increased urinary secretion as a symptom of nephritis; without a knowledge of the essential factors—it may be increased cardiac tension—it may be alteration in osmotic tension by reason of variations in the inorganic salts—which lead to such urinary increase, a real understanding of the process is impossible and something purely subsidiary is considered as primary. So one might study the symptoms of negativism, but without some idea of the mechanism—such as has been tried by Bleuler—its true understanding, failing a psychologic analysis, is well-nigh impossible.

The problems of onset have only an indirect psychologic interpretation in that we view this period as one of loose aggregation of the psychologic elements.

In a highly suggestive and remarkably stimulating

2. Bleuler: *Affektivität, Suggestibilität und Paranoia*, 1906.

3. Jung: *Ueber die Psychologie der Dementia Præcox*, 1907.

4. *Am. Jour. Med. Sciences*, August, 1907.

chapter in his recent study of dementia præcox, Jung has drawn a striking parallelism between the psychical mechanism in hysteria and in dementia præcox. He shows, from the viewpoint of interpretation, that practically the entire range of the præcox symptomatology has its analogies in the hysteric syndrome.

I have elsewhere developed a like point of view and have chosen to regard the hysterical syndrome, as Freud and Janet have already done, in the light of a loose synthesis, while the dementia præcox reaction is, I believe, the result of a psychical disintegration or analysis. As one obtains identical views on the ascent and the descent of a mountain slope at any one point, so by analogy there may be a point in the synthesis of an individuality which, after later development into a personality, has its almost exact counterpart in the analysis of the same personality, if such analysis proceeds by a like path as the synthesis. This is a common biologic phenomenon. It is seen, for instance, in the stages of synthesis and analysis of all classes of food stuffs, carbohydrates, fats and proteids, and it is interesting further to note that even though a strict chemical formula of the synthetic and analytic substance may be identical, yet the *products* themselves are different. This is seen, for instance, in the synthetic and analytic alkaloidal muscarin; urea and carbamic acid, which, while having the same formula—one building up into a more complex formula, the other breaking down from the more highly developed end product—yet they have different properties, physical, chemical and pharmacologic. So although a parallelism exists in the mechanism of the development of hysteria and dementia præcox, yet the products are quite dissimilar.

The psychologic mechanisms which go to build up personalities are in reality fundamentally similar, notwithstanding their immense complexity and the wide variations in their end products. In some individuals the power of synthesis is uncertain and halting. These individuals are unable, if I may use a crude analogy, to tie their psychical components, or complexes, together into a well-knit individuality; the different constellations which go to make up the individual are, by reason of this loose synthesis, liable, for a number of years at least, to separate, dissociate, and thus is developed in part or in whole the hysteric and the true hysteria syndrome.

On the other hand, other individuals of a different genre do crystallize a personality; they do advance to a more or less perfect synthesis; but this, by reason of factors of which we are at present largely ignorant, commences to be broken down, and the analysis of the previously tied together complexes determines the dementia præcox syndrome. This is at least a point of view that has, it seems to me, excellent justification. Jung's masterly setting forth of the parallelism of hysteria and dementia præcox adds much confirmation to the availability of the analogy for interpretative purposes.

It is, further, highly doubtful if what has been here set forth as a second symptom, i. e., the development of a psychasthenic state, is capable of a single type of interpretation. It is the result of a compound of simples and is not, I believe, capable of analysis *per se*. Depending as it does on a number of other conditions which are contributory to it, these are better brought under review.

Is the emotional deterioration which is so characteristic capable of explanation? A number of students have attempted it. Freud, Kraepelin, Stransky, Bleu-

ler, Neisser, Masselon and others. There is little doubt that the emotions, whatever they may be—and modern thought has demonstrated how difficult it is to formulate precise definitions for this class of phenomena—constitute the groundwork of personality. Modify the emotional life, and the entire social reaction is altered. Bleuler has emphasized the driving element in the "affectivity" of the individual, and Freud has shown how important a place the emotional complex, hidden or superficial, may take in action. The faculty of attention is recognized to be closely allied to the emotional substratum and Bleuler has pointed out that attention is really nothing more than a special case of affect action.

What Bleuler has termed our "affectivity," by which, as I take it, he means the driving force within us, is the most important understructure of our entire personality. Thought and action are in reality purely the outcome or symptoms of this "affectivity."

When brought face to face with an unfamiliar or, in a sense, dangerous situation, our reaction, although accompanied by a swift play of ideas, is determined by the feeling tone that underlies these ideas, and, for the time being at least, a new series of ideas, saturated with and inextricably bound together by the feeling tone—forms the affective complex—which determines our reaction. This new complex retards all others, dominates the attention, and this determines the narrowing of consciousness. The muscle tension and the sympathetic control of our blood vessels is controlled by the new complex or, in the words of the James-Lang hypothesis, is the complex or *the emotion*.

If the situation is met with a feeling of adequacy, satisfaction arises, the complex disappears, the narrowing of attention passes, consciousness once more becomes more widespread, the muscular tension relaxes and the altered circulatory mechanism resumes its usual course.

If not met adequately, however, the complex persists. Every time, under such conditions, the situation arises the same complex takes control, until there becomes a condition of hypersensitivity to this complex which is brought forth by the situation, and finally not only may the exact situation call forth all of the discomfort of an inadequate reaction, but allied and associated situations become the starting points for the development of the affective control of the individual.

Are we justified in assuming that the attention disorder in many of our dementia præcox cases is due to a more or less prolonged condition of hypersensitiveness to certain emotional complexes, as Meyer has suggested, a veritable establishment of a habit, whereby consciousness is narrowed and the patient remains under the tension of his affective state?

Stransky has developed an interesting point of view in this same general line of interpretation. As already outlined in the beginning, we have assumed the association of ideas in meeting a situation with an affect aroused by the ideas. In most of us there is a more or less definite relation between the idea and the affect. The smell of dinner brings forth its adequate emotional tone. In more complex situations there is a like adequate relation between idea and emotion—between the noopsyche and the thymo-psyche, as Stransky coins the words. Gradually, however, there develops in the dementia præcox, as with the hysterical, a disorder between these relations, at first an ataxia—to use a neurologic analogy—then later perhaps a true paralysis between the idea and the affect—this is Stransky's ré-

sumé of the situation and perhaps offers a clue to the bizarre, irregular reactions of the precocious demented.

The analysis of suggestibility is far from being complete, yet in the recent work from the Zurich school, negativism may have light thrown on it when viewed in the light of an abnormal negative suggestibility.

Negative suggestibility is a physiologic prototype; by it is meant the correction process which arises at the same time that suggestibility is engendered. The impulse to do in response to suggestion has its physiologic corrective—as it were, not to do too much or too excessively. The tendency to react too actively to suggestion leads to evidence of reaction in a given direction, only to be distracted to similar overviolent reactions in another direction when another suggestion supervenes. The negative suggestibility enters as a corrective to excess reaction and thus tends to make performance effective and purpose advantageous. But an abnormal negative suggestibility overcorrects and leads to the phenomenon of negativism.

Although Bleuler's statement of the case can hardly be considered more than the saying of old facts in new language, yet his elucidation of the mechanism of negative suggestibility is illuminatory and progressive.

The time limit of our papers does not permit me to develop the idea further; there does remain, perhaps, a few moments in which to say something relative to the therapeutics of the subjects.

THERAPEUTICS.

Many precocious demented, in fact, the most, are probably doomed from the very beginning. What with bad structure on which to build, bad environment and possibly a toxic factor (only postulated hypothetically), there is little opportunity for some precocious demented.

But a few are worth working for, particularly in the predementia stage. When the diagnosis is more or less patent the process has been too long in the making and the opportunities for repair have usually been neglected. The eccentric, ego-centric child is always a difficult problem, from the standpoint of training. Too many are permitted to go their own way in the hope that all will be well when they mature. A large number of precocious demented are drawn from this class.

I have tried in my paper already cited to indicate the lines along which these children should be trained, if possible. I believe, in the first place, in teaching them the petty conventions of life which make so frequently the oil that reduces social friction; the help in permitting an adjustment to unpleasant situations which thus diminishes the opportunities for affective action.

It is simple to say that a child should be trained to his *métier*, but extremely difficult to determine just what individual capacity is. In an interesting comparison made by Gaupp relative to the psychoses of urban and of rural communities, it appears that the stress of city existence bears particularly on the young mind and determines the hysterical and præcox reactions in the young more frequently, in the city, than in the country. This is a fact worth bearing seriously in mind if heredity and peculiarity are present in a child.

Schooling work does not seem to make a marked difference if it is pursued in moderation. The brighter, eager brains are more often damaged than those less pushing, and each individual child's reaction to its school work is worthy of close observation.

If the reaction to intellectual work is not normal—if fatigue enters as a large disturbing element—care

should be exercised in so arranging studies to obviate it. These children need schools in which outdoor pursuits are cultivated and made co-ordinate with or supplemental to more intense intellectual efforts.

There are a large number of ideas of primary importance in the care of this particular type of breakdown. Many are not hopeless by any means; they need the proper type of education, and scientific pedagogy looks to the physician to indicate the lines of development for this class of true mental healers.

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DISCUSSION

DR. WM. A. WHITE, Washington, D. C., said that not many years ago all mental cases were placed in large groups, called excitements, depressions and dementias. Later it was found necessary to differentiate still further, and many were going to the opposite extreme. Now we must study the psychologic states in individuals; we must study their course from beginning to end, explaining them on the basis of a biologic reaction of the individual to his environment. When we begin to do that, we find all sorts of symptoms, and when we begin to outline and define these different reaction types or psychoses, as they are called, we find the same sorts of reactions in many forms; for instance, hysterical attacks may occur in different groups. If we are going to define them more accurately, we must study the symptoms from a psychological standpoint, so that we may understand each one. That has been done by Janet by picking out definite so-called functional symptoms, and grouping them from a psychologic standpoint, one result of which has been a new psychoneurosis—psychasthenia. Dr. White believes further very careful study of all mental disorders must be made primarily along psychologic lines. The anatomic lesions of Broca's convolution have absolutely no meaning; they are nothing more than anatomical curiosities, unless the case was studied psychologically before it went to the autopsy table, and unless we know accurately just what the mental condition was during life. We must study the individual symptoms, and understand just what they mean in each separate reaction type. Then we must study the character of the individual, as Dr. Jelliffe mentioned, and in connection with the disorder under consideration endeavor to outline the character of the predementia type.

DR. L. H. METTLER, Chicago, declared that those who neglect normal psychology in the interpretation of mental diseases are in the position which medicine occupied before the days of Virchow, when diseases were nothing but groups of symptoms, mere unexplained manifestations. Of what use, he asked, is the clinical picture of any disease, except as a guide-post to the underlying physiopathology? It is all very well to talk about the termination of dementia, the beginning and the end of ataxias, etc., but what we want to know is, why these things are so? Why they occur thus? The only way to advance in abnormal psychology is to cling closely to the data afforded by normal psychology. And yet, Dr. Mettler has heard confrères say that there is nothing in normal psychology. Such an attitude of mind he regards as unscientific. Psychology has made tremendous strides lately, especially modern physiologic psychology. The psychic states under discussion represent the reaction of the individual, using all parts of his body. His physical organism is being influenced by his heredity and environment. In the study of psychic diseases, we study the reaction of the individual to his heredity and environment. One must consider always what a normal individual would do under the same circumstances. This brings us again to normal psychology. The variations from the normal represent his psychiatric trouble.

DR. SMITH ELY JELLIFFE, New York City, said that there is a small percentage of individuals with dementia præcox who by a more healthy and better adapted mental training might have escaped the penalty either of their inheritance or environment. Such pedagogy, true mental science teaching, to be efficient, must begin in the predementia stage, although even some later cases are not hopeless.