DEMENTIA PRÆCOX¹

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The story of the evolution of the present concept of dementia præcox is one of the most interesting in the history of psychiatry. Beginning with the efforts by Kraepelin to establish nosologic entities it has been richly amplified by the more exact and rational formulation of functional mechanisms by Adolf Meyer and others. The change in the classification of the psychoses for which we are so much indebted to Kraepelin and his school is only a replica of that through which internal medicine passed within quite recent years. It is not so long since it was customary to group together under one head, for instance, all cases of drosy. Today we realize that this is not a disease but only a symptom, prominent and striking it is true, capable of production by many diseases and functional disturbances. Structural changes in organs, or pathologic anatomy, are gradually beginning to take their proper position in relation to the disease picture. We are beginning to realize that while in many instances the anatomical lesion can be directly responsible for the development of the disease symptoms, yet on the other hand it may be the result of disorder of function brought about in some other way or may be entirely secondary to disease in some other part of the body. In pneumonia for instance the main symptoms and course are not due directly to the structural changes in the lung, for at the crisis when the symptoms disappear so rapidly the lung is still in a state of solidification. In order to obtain a grasp of any disease complex we must be able to state not only the facts as to the symptoms and pathologic anatomy but to trace the relations between the factors which led to the disturbance and the disease manifestations as a whole. The problem in other words is a biologic one.

The first step in rearranging our views upon mental disorders

¹ Read before the Chicago Medical Society, April 17, 1912.

must necessarily consist in a reconsideration of the various symptomatic groups with a view to determining if possible more fundamental bases for arranging our cases so that they shall come to represent disease entities rather than purely symptomatic pictures. This must necessarily result in the tearing down of older barriers and the establishment of new criteria for classification. Just as in the old group of dropsy some cases are now ranged under the head of renal disease, cardiac disease, various conditions leading to pressure on blood vessels, etc., so it becomes necessary to break up the old groups of mania, melancholia, paranoia, etc., and to rearrange the cases under headings which mean something more than merely prominent symptoms. In the doing there must arise considerable confusion and misconception, new terms must be established and new definitions laid down. Evolution so rapid that it might almost be called revolution has taken place in psychiatry in the last few years with the consequence that it becomes almost impossible to read the writings of any particular author without first becoming thoroughly acquainted with his method of expressing himself.

It is perhaps hardly necessary for me to point out that these changes are of vastly more than academic interest. Until we can definitely understand the nature of the disease in any given case it is obviously impossible to lay down any laws with regard to prophylaxis, rational treatment or prognosis. Such a possibility has already been achieved in regard to one particular group, general paralysis, and the problem of prophylaxis has now become a question of social organization.

Leaving out of consideration mental disorders such as those accompanying certain gross nerve lesions, the fever deliria, etc., we have an immense mass of cases often spoken of as functional psychoses. It is among these of necessity that the greatest changes are in progress. Many persons scoff at the term functional, seeming to regard it as implying the existence of supernatural factors. It is probably true that the term has covered, and still does cover, lack of knowledge in many instances, but that disturbances of function do occur without actual primary disease of organs can hardly be questioned. The word primary is here used purposely because there is also no doubt that the organ may become diseased and show definite changes in its structure as the result of disorder of its function. The kidney for instance will

undergo secondary changes as the result of being called upon to perform work to which it is not adapted, such as the excretion of sugar in large amount in diabetes. This must be even more true for an organ like the brain, whose principal duty is that of coördinating the different functions of the body with one another and the body as a whole with the conditions in its environment. Under the complex conditions of human life the brain must frequently be called upon to meet conditions for which it is unprepared and perhaps unfit. Leaving this question for the present we may review the steps which have led to the regrouping of those cases now called dementia præcox.

For generations it has been recognized that the picture presented by an insane person at any one moment may be replaced at the next by another which has the appearance of being totally dissimilar. This led to the study of the whole course of the disorder with a view to determining whether there were not some more fundamental features which were present all through. This was especially emphasized by Krafft-Ebing and has been faithfully carried out by his pupil Kraepelin. Many authors have attempted to separate from the great mass of symptom-pictures certain types which tend to end in a final stage of dementia, with the resulting formation of the groups of hebephrenia, katatonia, adolescent insanity, etc. But to Kraepelin belongs the credit of breaking entirely through the traditional lines of classification and the formation of a broader conception of the facts of observation. Arguing by analogy with general paralysis he contended that the final outcome must represent an indication of the essential nature of the disease underlying the very various symptom-pictures which result in this form of dementia. This line of argument is certainly open to very important objections, but we may let it stand for the present. As a consequence was formed the group of dementia præcox which we find to be defined by Kraepelin as containing "a series of disease-pictures whose common characteristic is the outcome in a peculiar state of weak-mindedness. It is true that apparently this unfavorable outcome need not occur without exception, but it is nevertheless so extremely frequent. . . ."

Starting then from a study of these end-states Kraepelin proceeded to analyze the various symptom pictures observed during the earlier phases of these disorders with a view to determining

whether there were any indications at such period of the presence of this peculiar form of dementia; since, obviously, if Kraepelin is correct in assuming that the final result represents the specific effect of the disease process, there must be some evidence of it all through the course of the disorder. The consequence of this study is the description of the manifestations of dementia præcox as we know it today. Whether or no one accepts these views *in toto* psychiatry owes to Kraepelin the inception of the biggest step forward that has yet been made and must honor him both for his courage in breaking through the time-honored fetters of symptomatic nomenclature and for the keen-sighted analysis of symptoms which has resulted in bringing into prominence features hitherto ignored or considered unimportant.

The one fundamental feature underlying all the various pictures which are presented by patients suffering from dementia præcox seems to be a disturbance in the emotional field of life which may best be expressed as disturbance of interest. By this one means that the individual is incapable of showing that interest in conditions and events which had been present in health. There seems to be as Kraepelin expresses it a "blocking" (Sperrung). Something seems to stand in the way of normal interest. One can readily understand that such interference must of necessity occasion marked disturbances in the coherence of the stream of thoughts which arise in consciousness and give rise to distortion of affective life and of the actions and conduct of the individual. It is interestedness which directs the trend of thoughts and renders continuous thinking and harmonious action possible. Let us lose interest and we know that at once our thoughts become scattered and we achieve nothing. In using this term interest I want especially to avoid any suggestion that I imply thereby any outside governing agent. Interest, unconscious it is true, is shown by the brainless frog when it carries out a series of highly complex movements accurately designed to achieve the purpose of removing the acid from its back. We may regard as interests those relations between the various organs of the body and between the body and the things of the outside world which are of importance for the preservation of self and species. Some of these are instinctive, that is to say inherent in all living matter, other conditions acquire interest during the life of the individual because they are found by per-

sonal experience to be important for the welfare of the individual and of the species. The greater the importance the greater the interest.

It must not be thought that this disturbance of interest is obvious in all or even in most cases. There are many conditions in which real or apparent loss of interest occurs with close resemblance to this peculiar distortion or blocking, and the conclusion that it exists in any given case often requires the most careful and painstaking observation with expert analysis of the whole situation, just as one deduces the presence of an infection with typhoid bacilli from the observation of particular signs and symptoms no one of which is characteristic. Among the features especially indicative of this state of "block," besides the indifference which may be more or less apparent, may be mentioned incoherence of thought, that is to say a lack of cohesion and connection in the sequence of thought (sudden inexplicable changes of direction, etc.); lack of harmony between thoughts as expressed in words and acts and the expression of emotion (laughing while relating bad news, etc.); the presence of contradictory emotional states in connection with one and the same group of ideas (the husband both loves and hates his wife (affective ambivalency of Bleuler)). It is impossible here to enter upon any more complete description, but one may say that some such evidence is constantly present although continued observation may be necessary in order to demonstrate, and no diagnosis is justified without, it. In his recent monograph Bleuler separates as fundamental (that is to say constant and peculiar to dementia præcox) features such as those given above from a further large group which he calls accessory symptoms. Under this heading come all the more prominent and striking manifestations which previously gave occasion for the symptomatic classifications and were generally responsible for the removal of a patient from his home surroundings to an institution. They include hallucinations and other sense falsifications, delusions, memory disturbances, bodily symptoms, katatonic features and the various acute syndromes. These are in part at any rate secondary to, that is to say the result of, the more fundamental change, but are not present in all cases, and to some extent may be found in other psychoses. They therefore cannot be regarded as peculiar to the disease process underlying dementia præcox. They are ex-

tremely variable in time of onset, duration and severity. Such a separation emphasizes the derivation from some more fundamental disturbance, but is to some extent artificial in that as explained above one really deduces the "blocking" of interest from the picture as a whole, and the mechanism which gives rise to these manifestations is the same as that causing the disturbances which are regarded as fundamental symptoms.

The group thus formed varies greatly in its breadth according to different authors. Kraepelin includes all cases originally classed as heboidophrenia. (dementia simplex) of Kahlbaum, adolescent insanity of Clouston, katatonia and hebephrenia of Kahlbaum and Hecker, many of the cases originally classed under paranoia, some of those belonging to the older groups of amentia, mania, melancholia, as well as cases grouped under various etiologic titles such as masturbational, puerperal, etc., insanity.

Bleuler widens the concept even further and includes many individuals who never enter an institution for the insane but show merely a blunting and narrowing of interest, eccentric and peculiar personalities, etc., all amentia, chronic paranoia, alcoholic paranoia, dysomania, etc. He claims that over 30 per cent. of all cases admitted to Burghölzli belong to this group.

Kraepelin divides the cases into three subgroups representing different varieties of clinical course. These are the hebephrenic, katatonic and paranoid forms. Bleuler and others describe a fourth, dementia (or schizophrenia) simplex, which is included with the hebephrenic form by Kraepelin and constitutes only a small proportion of those entering the hospitals. This group would be more common outside these institutions and is represented by a slowly progressive dementia without acute symptoms which may become stationary at any period of its course. Under this heading would come many of the failures in life, the tramp, the psychopath, etc. Others group the hebephrenic and katatonic together as one large class. All admit that these subdivisions are more or less artificial. Characteristic examples are easily assigned to one or the other but there are numerous transitions between the various forms which it is extremely difficult to place. One may therefore regard this subdivision as merely of practical and not essential value.

The vast majority of cases originate in persons under 25 years of age, but it is interesting to compare the views of Kraepelin

and Bleuler upon the cases arising in later life, the so-called Spätkatatonie. In the latest (eighth) edition of Kraepelin's textbook we find that he now classes under the head of presenile or involuntional psychoses many of the cases which he previously included with the katatonic form of dementia præcox. Unfortunately the section of this book dealing with dementia præcox is not yet published, so that it is impossible to determine what effect the removal of these late katatonias will have upon his views as to the occurrence of this disorder in the later decades of life. Kraepelin states that the katatonic features shown in these cases are late in their time of onset and that he is unable to satisfy himself that the same mechanism underlies the disorder which we have given above as characteristic of dementia præcox. He also thinks that the final state of dementia which ensues is different in certain features from that of dementia præcox. Bleuler on the other hand includes not only these which are now separated by Kraepelin but also the one clinical type which in Kraepelin's seventh edition was given as a presenile psychosis characterized by certain delusions of derogation leading to dementia. Such facts as these indicate better than anything the state of flux which obtains in the outlining of these newer concepts.

It might at first sight appear as if such a concept containing superficially such different individualities but served to increase rather than to lessen the confusion in psychiatric nomenclature. If, however, one remembers that there are certain peculiar and apparently fundamental features throughout, no matter what the setting, one will readily appreciate that this step really means an advance. Hitherto, *i. e.*, before Kraepelin, it was necessary to change the grouping as the picture varied. A patient might today belong to the manic excitements, tomorrow to the amentia or confusion group, and again later to the agitated melancholias, and yet the final result be this more or less peculiar dementia. Time and study are still necessary before the boundaries can be clearly defined but there can be no question that the main features will persist.

Having advanced thus far there still remains the all-important question of the reason for these developments, the cause of this blocking and affective deterioration, and the manner in which are derived the various symptoms and syndromes. With regard to the first part of this question there are still great dif-

ferences of opinion. Kraepelin and many others upon the grounds of certain analogies hypothecate some intoxication, probably an autointoxication. Adolf Meyer and Jung especially insist upon the strictly mental factors as facts of definite concrete observation and show beyond question that in a large percentage of actual cases the disorder can be definitely traced in its evolution from faulty adjustments in individuals of peculiar makeup. Before discussing further the points in question it would probably be well to say something of what is meant by mental factors as causes of mental and bodily disorder. The problem is so large that I can give but the merest and most elementary suggestions as to its meaning.

I have already briefly indicated above the modern conception of the relation of mind to the adjustment of the organism as a whole. It was also pointed out that interest represented the relation with conditions of importance to the body in its struggle for existence and procreation. Corresponding to this interest are certain adjustments of the body representing states of preparedness to take advantage of the change in the environment which aroused the interest. Accompanying such adjustments are peculiar states of consciousness which we call "feelings" or affects. It is still a moot question whether the conscious state is primary or whether it merely represents the result of the bodily adjustment. According to this latter view promulgated independently though with some variation in detail by James and Lange, one might say that a man does not run away because he "feels" afraid but he "feels" afraid because he runs away. It seems probable that there is some truth in both views; that with regard to the more fundamental, instinctive interests the adjustment takes place reflexly and only then does the emotion appear, but it may be quite otherwise with the less deeply organized adjustments and their corresponding "feelings." However this may be, it is a fact that the conscious state and the adjustment of the body as a whole, which includes a state of activity not only in muscles but also in glands, are extremely closely related and cannot be separated. Pawlow for instance has shown conclusively that the secretion of gastric juice depends upon the "desire" for food more than upon anything else. One may therefore conclude that what we know as affective states of consciousness are inseparably related to an

adjustment of the whole body and that where one is present the other also exists. It is a matter of everyday knowledge that emotion has a powerful influence upon metabolism or as it would be better said the metabolic changes form a part of the state which in consciousness is called emotion.

Need one then be surprised that under the complex conditions of modern life difficulties of adjustment should arise? Especially is this true in relation to the reproductive functions which represent the strongest instincts of living matter, far outweighing even those of self-preservation and hence possessed of the greatest interest and highest affective coloring psychologically. The natural adjustment is impossible and the difficulties are increased for the young by the enforced ignorance (which is not and cannot be innocence), the faulty knowledge resulting from natural curiosity and accidental experiences, and the prudery and false modesty which are such common results of our present social and so-called moral training.

Difficulties in adjustment mean disturbances of the bodily mechanism as a whole and where long continued and of harmful character there must also be prolonged and harmful disturbance of mental activities. Such briefly is what is meant by mental factors. They postulate nothing which is not as "physical" as the strictest materialist could desire. It is not necessary nor intended to limit the difficulties to be faced to those connected with the reproductive sphere but these are so incomparably more important and have such wide connections with the activities of life (besides being subject to the strongest repression) that they must outweigh other problems to an enormous extent.

Meyer basing his views upon observations of actual cases sees the source of the "blocking" and other features in the formation of certain habits of adjustment in regard to difficulties whereby the individual, instead of squarely facing and grasping the problem as a stern reality and adopting a definite plan of action, hesitates and ruminates or proceeds to satisfy the desires which underly the difficulty much in the manner of a child playing a game, replacing the forbidden desires by some substitute which has in some accidental way become associated with it and so giving it the appearance of harmlessness. Such states of tension or phantastic day dreaming may absorb more or less, the entire interest of the patient to the exclusion of all else. The

nature of the conflicts or wish fulfilments has not been grasped by the individual and consequently they remain shut in, not open to expression or correction. The absorption and inaccessibility thus arisen represent what we mean by "blocking."

Many authors, for instance Bleuler, refuse to accept this view that such mental factors are alone capable of giving rise to the disorders of mind and body grouped under the head of dementia præcox but yet are willing to concede, and anxious to prove, that they play the all-important part in the determination of the symptoms. I cannot here enter into these mechanisms but may mention that they depend upon the principles of dynamic psychology which have been so largely elaborated by Freud. "The Psychology of Dementia Præcox," by Jung, clearly and fully illustrates these mechanisms and opens up a path for the interpretation of many otherwise hopelessly inexplicable phenomena which cannot fail to materially aid in intelligently dealing with these patients.

If one considers the various views which have been propounded as to what, to quote Adolf Meyer, is "back of it" we find ourselves in a realm of pure hypothesis and speculation. It is true that in the various pictures of dementia præcox there are many features which closely resemble those which obtain in states of intoxication and one would be unwise to deny the possibility of such being present. But it should always be remembered that such intoxication may well be secondary to the disturbances in muscular and glandular activity which we recognize as part of the disorder in psychological adjustment. The attitude of intolerance which ignores the facts of observation of psychological difficulties with the orderly sequence of evolution of the disorder must be far more harmful to the development of a systematic scheme for handling this problem than any refusal to be led away from them by enticing theories, which if correct might permit the hope, at some future time, of a wholesale cure.

I cannot here go into the facts in any very great detail but may summarily mention a few of the arguments in question. In the first place the study of the brain post mortem has revealed certain changes which, although not constant, have roused considerable hopes that here, at last, we have something tangible. The changes which have been found involve the nerve tissue proper, leaving the supporting tissue and vessels practically free. Among them

are especially lipid and protagonoid degenerations of the nerve cells with an overgrowth of the glia cells. Especial attention has been paid to certain ameboid cells which the recent researches of Alzheimer would tend to show serve the purpose of removing the various lipid products of degeneration in the nerve cells and conveying them to the vessels where they are absorbed. Very similar changes are found in many other disorders and Meyer especially emphasizes their occurrence in Huntington's chorea, a disease belonging essentially to the heredo-degenerative conditions of the brain. Similar changes are also found in some of the intoxication disorders such as chronic tuberculosis (even without dementia præcox symptoms) and might thus lend some color to the intoxication theory. There is however nothing in the picture which suggests any disease process such as that which obtains in general paralysis and other disturbances of like kind. The clinical picture of dementia præcox also strongly negatives any conception of an actual destructive process; memories are not lost but only distorted and difficult to arouse; sudden astounding improvements occur at times in old standing dements as the result of acute infectious diseases which would speak strongly against any destructive lesion. Chemical analysis of the brain, in the able hands of the late Dr. Waldemar Koch, also revealed a disturbance in the relative proportions of the different combinations of sulphur. This is probably of a piece with the various lipid and protagonoid changes found microscopically but the methods are still so gross that but little conclusion can be drawn from them.

Many of the clinical pictures during the acute stage closely resemble the intoxication deliria (similar pictures are also seen in hysteria); many of the bodily symptoms, the blood changes, cardio-vascular disturbances, trophic alterations in the skin and bones, gastrointestinal symptoms, increased myotatic irritability, etc., are common in intoxication disorders.

Studies of the balance of the various elements concerned in metabolism also show alterations involving especially the sulphur and possibly magnesium and calcium components but they are still too few and to some extent contradictory to permit of any definite assertions.

All these features unquestionably suggest changes in metab-

olism, the study of which will amply repay the time and labor expended. But there is yet to be found any evidence that they play any rôle in the actual causation of the disorder.

With regard to the nature of the supposed toxin we have a wealth of theories from which to select. Kraepelin suggests a disturbance of the internal secretion of the sexual glands, others have incriminated the thyroid and suprarenals. Still a further group would see the possibility of some infective toxin, such for instance as those of syphilis and tuberculosis. The percentage of cases in which a positive Wassermann test has been obtained is rather strikingly high. Noguchi in 135 patients found 12 per cent. positive. Roubinowitch and Levaditi found 3 cases positive in 15 examined. Such figures suggest the need for further study, but hardly justify a conclusion that syphilis is directly an etiologic factor. Stress has also been laid upon the frequency of dementia præcox in the descendants of general paralytics and tabetics. It may be that syphilis in the parents is a factor in the nervous insufficiency which everyone admits in those who suffer from dementia præcox. Alcoholism (in which Bleuler would see dementia præcox) is certainly much more frequent in the parentage, 26 per cent. according to Wolfsohn.

In concluding I would wish to emphasize, as has already repeatedly been done by Adolf Meyer and others, the practical importance of the functional interpretation of this group of disorders. In it lies a possibility for a rational attempt at prophylaxis. This is not a simple, easy task like that of vaccination, but embraces carefully considered problems of social organization. It is true that the type of personality which suffers from dementia præcox is not completely and clearly defined, but its broad outlines are known and should lead to careful consideration in training and selection of occupation for those in whom it is recognized. The inculcation of practical activity as opposed to abstract thinking is of the utmost importance and needs careful consideration in our schools, especially the elementary ones. Furthermore since so many of the difficulties which play a part in the evolution of the disorder belong to the reproductive sphere, more care and attention to instruction in these problems and the modes of meeting them should be universally provided. These questions are already being undertaken from other points of view but still far from as aggressively as they should be.