THE INTERRELATIONS OF MENTAL DEFECT AND MENTAL DISORDER.*

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The development of the concepts underlying the terms mental deficiency and psychosis with mental deficiency, may be arbitrarily divided into four periods, which to a considerable degree, overlap. The first period is concerned with the separation of the two principal groups, mental deficiency and mental disorder. Even before the time of Hippocrates some differentiation had been made between the idiot, who was feeble-minded from birth and the dement, who had deteriorated from a previously normal status. Pinel (1), however, as late as 1806 used the term idiocy loosely, and included many cases of terminal dementia and other deteriorated states. The end of the first period is marked by the definitive separation by Esquirol (2), in 1828, of mental defect and mental disorder, but it was not till 1886, in England, that a legal differentiation was made been insanity and feeble-mindedness.

Itard's (3) classical experiment in the re-education of an idiot boy, in 1798, formed the basis for the physiological orientation, which marked the second period. He believed that this boy's deficiency was due to a deprivation of the proper sensory stimuli, and with the conception that sensory perceptions, their interpretation, association and representation were the foundations of intelligence, he believed he could educate him to a normal level by systematically supplying these stimuli. Although he did not attain his objective, the success which he did experience was an incentive to the study and treatment of mental defectives by the physiological approach.

The classifications adopted at this time were mainly the result of such methods, but at a later date we find psychological, legal, and sociological considerations influencing nosological schemata. The following are some of the classifications proposed:

Esquirol—1845. Classification according to the power of speech.
- Idiocy.
- Imbecility.

Seguin (4)—1866. Classification according to defective functioning of the central or peripheral nervous system.
- Idiocy: Profound.
  - Superficial.

Ziehen (5)—1890. Classification according to intelligence.
- Psychoses with intellectual defect:
  - Idiocy.
  - Imbecility.
  - Feeble-mindedness.

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Sollier (6)—1891. Classification according to power of attention.
Idiocy: Absolute.
Simple.
Imbecility.

Royal Commission of England—1894. Classification according to ability to adapt to socio-economic conditions.
Idiocy.
Imbecility.
Feeble-mindedness.

Many other classifications appeared during this period, on the basis of curability, ideational activity and convulsive status, and others along anatomico-histological lines. The varying degrees of severity in mental deficiency were early recognized, and most of the classifications include this gradation.

Mental deficiency having been separated from mental disorder, associations of the two conditions were described. Seguin, in 1866, cited several cases in which psychoses appeared in idiot children, some of the hyperkinetic type and others of the hypokinetic type. In 1867 Griesinger (7) divided such cases into the apathetic and excitable groups, and reported delusional insanity, mania and melancholia occurring in imbecile children. He regarded fretfulness, striking, biting and destructiveness as evidence of true mania. As other psychotic conditions he mentions epilepsy, chorea, stupor, catalepsy, ecstatic states and somnambulism. Ireland (8), in 1877, in his survey of the problem of mental deficiency, reported several cases in a similar manner. Clouston (9), in 1884, stated that mania, melancholia and deterioration may occur in defectives. Hurd (10), in 1888, held that the attacks occurring in the lowest grade defectives could not be considered as insanity, but the psychoses of the higher grades were similar in type and progression to those in previously normal individuals. In 1897, Phelps (11) spoke of hysterical, eccentric and paranoic behaviour in imbeciles, and concluded that insanity and imbecility grade into one another, and cannot be perfectly separated out.

The third period is marked particularly by the work of Kraepelin, and of Binet and Simon, at the turn of the century. Kraepelin (12) retained the two primary divisions, apathetic and erethic, and placed the disorders occurring in mental defectives in relationship to his whole broad nosological system. He stated that imbecility may form the basis for manic-depressive, involutional, senile and dementia præcox psychoses, and that 7% of the latter appear on an imbecile basis. He emphasized the statement that individual symptoms of other psychoses might appear, but were not to be included as the specific psychotic types. Most of the subsequent studies and classifications in this period were based essentially on the work of Kraepelin. Barr (13), in 1904, stated that insanity was a frequent occurrence, particularly in the higher grade imbecile, and that the prognosis in such cases was favourable. Norsworthy (14), in 1906, from psychological studies of defective children, concluded that the difference between idiots and children was quantitative rather than qualitative, and that their normal and abnormal variations were similar. Tredgold (15), in his study in 1908, estimated that mental disorders in defectives were twenty-six times as frequent as in the ordinary population. He cited twenty cases with a wide variety of psychotic conditions, and found that the insanity of the feeble-minded, on the whole, did not differ from that of ordinary people, but was more of an endogenous type and less related to psychic stresses. The sudden violent storms of idiots he also regarded as true insanity. In studying the higher grades of feeble-mindedness, Huey (16), in 1910, came to a similar conclusion, considering the psychoses similar in nature to those in non-defectives, but differing in degree. He included in his classification criminality and moral degeneracy in the compass of the aberrant reactions in mental defectives. In 1915, Berkley (17) classified his cases partially symptomatically and partially according to the accepted nosological groups. He concluded that the psychoses were of the hyperkinetic type, that hallucinatory states were particularly frequent and that there was a tendency to quick dementia. Delusional formations were

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poorly elaborated and systematized, owing to the fundamental defect in the formation and association of ideas; therefore, paranoia, as an entity, could not develop in defectives. Gordon (18), in 1916, studied a series of 240 cases; 180 of these were termed phobias, anxiety and hallucinatory reactions, collectively considered as psychasthenic states. Sixty cases showed more severe symptomatology, and of these forty were classified as dementia præcox, the paranoid type being predominant. The others included manic reactions, depressions, and hallucinatory states. He mentioned that these reactions were of a shallow transitory type, except a few cases of dementia præcox, which went on to a terminal dementia. He stated there was a fundamental difference in the affectivity, and in the influence of the latter on the formation of complexes of ideas, in individuals of a normal and of a deficient mentality. Richards (19), in 1919, reported sixteen cases, four of which were classified as schizophrenia, three as epilepsy, and the others as behaviour problems, panic and confusional states. The four cases of schizophrenia, which she described in detail had mental ages of eight and nine. She considered such cases as true schizophrenia, with the onset, symptomatology and progression found in previously normal individuals, associated with mental deficiency, but not the result of it. Beier (20), in 1919, divided defective groups into those showing affective defects, including criminals and psychopaths, and those showing intellectual defects. He considered it quite logical to assume that all forms of the psychoses occur in the feeble-minded, and that dementia præcox, because of the inferior cerebral development, was especially prone to develop. Prideaux (21), in 1921, found that psychoneurosis and mental defect were closely related, and that the former occurred much more frequently than dementia præcox, or the manic-depressive type.

From this time some divergence is evident between the methods of study of the European and American workers. In America the psychobiology of Adolf Meyer (22) emphasized the study of the individual as a personality, treating behaviour as a function of the total organism. Mental and non-mental were to be considered, and in their interdependencies and interrelationships constituted the psychobiological level of integration. The adaptations of this integrated organism were to be studied in relation to life settings. Each individual was to be examined for assets in the affective, cognitive and conative reaction sets for the conditions under which his reactions became aberrant and for the conditions which might cause modifications in these reactions. Such formulations, in their application to our study, mark the fourth period as that of the psychobiological orientation.

In 1922, Potter (23) made a plea for the consideration of the feeble-minded and their mental disorders, not solely on the basis of their intellectual capacity, but also on the basis of their personality and their reactions to life situations. Bartemeier (24), in 1925, studied carefully nine cases, including five of schizophrenia, two of hysteria, and two of excitement. He concluded that the history of onset, the various components of the reactions themselves and the settings in which they occurred, did not seem to be different from the psychoses of previously normal individuals. In 1937 Milici (25) made a similar study, dividing his cases of schizophrenia into three groups on the basis of course, duration and termination, and he emphasized the varying degrees in reversibility of the psychotic reaction.

Most of the European workers maintained essentially the previous methods of study. Bleuler (26), in 1924, retained the divisions apathetic and erethic, and, as did Kraepelin, spoke of schizophrenia being accidentally engrafted on oligophrenia, the term "propfschizophrenie" denoting this relationship. From his study of mental deficiency, he felt that the affect was little, if any, interfered with, and stated that the "psychisms of inhibited development were concerned only with a want of associations". Weygandt (27) earlier, and Neustadt (28) and Van der Horst (29) more recently, were concerned with the separation of the true schizophrenias which occur in defectives, from those resembling them, the pseudoschizophrenias. Van der Horst (1932) divided the psychoses in mental defectives into two groups, those identical with the ones occurring in previously normal individuals and those not identical. The latter, which comprised 42% of the total of 174 cases which he collected, he classified as the pseudoschizophrenias, the autochthonous affect-labile

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types, and the hysterical psychotic types. He sought fine differentiations to distinguish them from the usual types of psychoses in non-defectives. His conclusion was that there was a definite entity "psychosis with mental deficiency", in which the pathoplastic constitution, the basis of the deficiency, was the ætiological agent in the production of the psychosis. Duncan and his associates (30), in 1936, studied the cases showing evidence of mental deficiency in a large mental hospital. They stated that any type of psychosis or psychoneurosis may occur, but the majority were inclined to two types, schizophrenia and manic-depressive. They found that 37% of the schizophrenic and 27% of the manic-depressive, were feeble-minded or mentally dull. Their studies, however, did not appear sufficiently to distinguish between original defect and the apparent defect resultant from the psychotic reaction.

Coincident with the work of Kraepelin, Binet and Simon brought forward their method of estimating the intelligence level of children, and since that time innumerable modifications and innovations have appeared. Their application to the classification of mental defectives resulted in a fairly accurate division on the basis of severity, and the use of various batteries of tests in institutional work is now a matter of routine. Although criticisms of these tests in their application to personality disorders and psychoses are valid, yet with certain reservations and precautions they are extremely valuable adjuncts to the study of these disorders.

There has been little resolution as yet of many of the contradictions and inconsistencies indicated in this brief review of the literature. Attempts have been made, notably in the classification published by the National Committee for Mental Hygiene, to bring the various types of psychotic reactions under a single heading of psychosis with mental deficiency. In the outline the descriptive features are given as "attacks, usually of an acute and transitory nature, most commonly episodes of excitement, with depression, paranoid trends or hallucinatory attacks". However, it is also stated that manic-depressive attacks, dementia præcox or organic psychoses may occur, and are to be classified according to their respective headings. The term, from its use as an inclusive one, covering all the disorders occurring in mental defectives, has been applied in many instances as a definite clinical entity, the mental deficiency itself being regarded as the ætiological agent. This view has been vigorously upheld by Henderson (30) in a recent discussion. May (31), in an earlier paper, was explicit in denying the status of disease entities to these disorders, or even a relation to the adult psychosis. He stated: ". . . at this time there are few, if any, reasons for thinking that the feeble-minded ever develop a genuine dementia præcox, or that the latter psychosis has been engrafted on the former condition. They are often subject to schizophrenic episodes, just as they frequently develop other transitory attacks, which are expressions of their fundamental deficiency, and are not disease entities, such as schizophrenia". Greene (32) deprecates the confusion existent in the differentiation between the feeble-minded and the psychotic, and shows that a large number of psychotic individuals are unjustifiably classed as mental defectives. He reviewed the symptomatology in the cases classed as psychosis with mental deficiency and those as mental deficiency without psychosis, and found that the same symptoms were present in both groups. He concluded that psychosis with mental deficiency does not constitute a clinical entity, and cannot be separated from other conditions. Such a diagnostic term, because of its generality, has been used as a convenient depositary for such cases as cannot be forced into the existing classifications.

From the foregoing we see also that the concept of psychosis with mental deficiency is closely linked to the concept of the functional psychoses as definite disease entities. Regarding schizophrenia as a distinct clinical, and even pathological, entity has resulted in such terms as "engrafted" or "propfschizophrenie," the psychosis itself having only a casual or accidental relationship to

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the organism. With the development of psychopathology, and the objective psychobiology of Adolf Meyer, a different method of approach to the study of the aberrant reactions in mental defectives became established. The psycho-analytic technique also has been utilized, notably by Clark (33), in such studies; Rosanoff (34), in the recent edition of his book, has so far diverged from the conception of the psychoses as disease entities that he classifies these reactions as syndromes rather than diseases.

A satisfactory method of gauging the intellectual level has been obtained, but we have as yet no measure of an individual's affective level. Wylie (35) believed that the instincts and affect of the feeble-minded child were distorted and defective, and this formed the basis of the more patent intellectual defects. Gordon also felt that there was some change in the affectivity of the defective. We do not, however, know of any variation in affect as we do of variation in intelligence. Bleuler states specifically that, as far as we know, affect is the same in the idiot, the genius and the animal. While affect in itself is subject to little change, its control, direction and expression is infinitely variable, depending on the interrelationships between biological factors, environmental influences, and more especially, as growth and development proceed, on mentation, the characteristic of psychobiologically integrated activity.

Biologically there are two fundamental modes of reaction to environmental stimuli: (1) Through instinctual-affective mobilization and motor discharge, the production of an alteration in the environment, and a resumption of an equilibrium, by the organism, with the altered environment. (2) Absence of such discharge with passivity and inactivity, the organism making whatever changes are necessary for adaptation in its internal economy. Pathologically these reactions may be in the direction of over-activity or under-activity. They are evident in their purest forms in infants, idiots and primitive peoples, but alternating and mixed forms may occur. The terms "hyperkinetic" and "hypokinetic" have been used to express the affective-motor organization, since in such individuals psychological activity is minimal and the motor activity is the prominent feature. Over-activity as an adaptive mechanism is much more frequent than under-activity, because of the biological utility of the elated, active, aggressive reaction.

The possible types of reaction of the idiot are very few. Inherited instinctual-affective patterns are observed, such as kicking, biting and screaming, or withdrawal from the customary sphere of activities, with avoidance of food or movement. As a result of the arrest of development it is impossible to form new patterns. At an early stage a primitive constitutional periodicity is evident, and there may be an alternation of these reactions. Coincident with increase in intelligence, the possibilities of reaction and adjustment are remarkably multiplied, and we begin to see reactions suggestive of the adult forms of schizophrenia and other disorders, basically similar, though not expressed with the same complexities or rationalizations.

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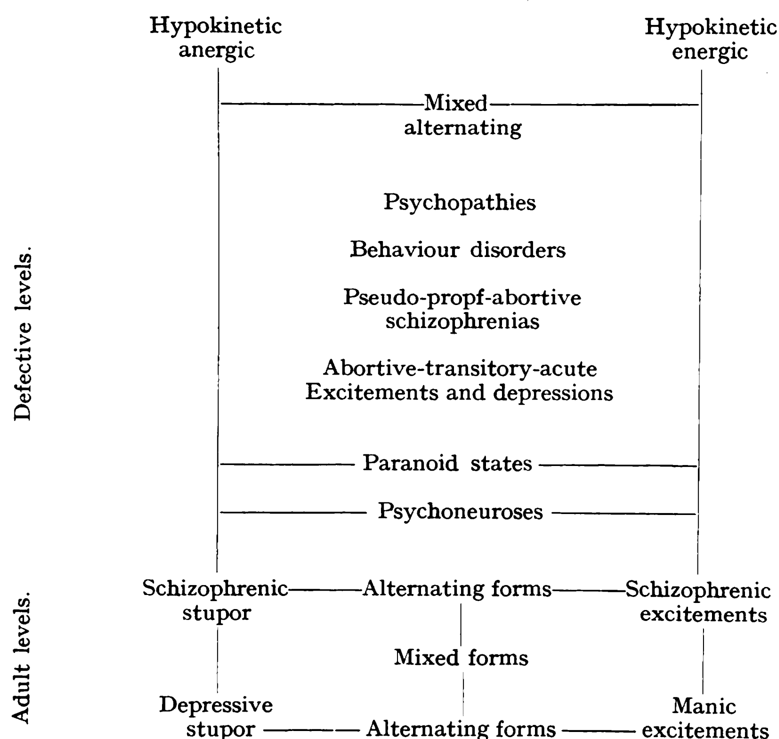

FIG. 1.

A schematic representation of such development is shown in the figure. In the defective levels are included those groups which have been described in the literature and mentioned as varying from the psychoses of previously normal individuals in duration, depth, course, etc. As we reach the adult levels, the accepted nosological groups are given, although these do not indicate the diverse modes of reaction.

Fifty mental defectives suffering from mental disorders were studied, the basis of selection being the presence of actual mental deficiency and a sufficient deviation from an accepted normal for defectives to be considered pathological. Although the distinction is not fundamental, in order to introduce as few complications as possible in the study those individuals were selected who showed no evidence of organic-structural change.

Presumably these individuals came within the normal distribution curve, as given by Goddard (36), of intelligence variation in the human race.

The level of intelligence expressed as mental age was determined by a number of factors. Most of the cases having been transferred from other institutions, intelligence tests (Stanford revision of the Binet-Simon intelligence tests) were obtained prior to the development of the aberrant reaction. This

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was compared with the school record, including type of school, grade attained, record of siblings, and with previous socialization and reaction to discipline. Evidence of scattering was looked for, and Babcock's index for deterioration utilized. In many, corroboration was possible in repeated tests following recovery from the psychotic attack. In this way a fairly accurate estimate of the intellectual level was obtained and correlated with the reaction type.

TABLE I.

Reaction type.	Mental age. 4–5.	5–6.	6–7.	7–8.	8–9.	9–10.	10–11.	Total.
Schizophrenia	..	1	3	4	6	4	3	21
Manic-depressive	..	..	2	2	..	1	..	5
Schizo-affective	..	..	1	..	1	..	2	4
Paranoid	..	..	1	1	..	..	..	2
Involutional melancholia	..	..	..	1	..	..	..	1
Psychoneurosis	..	..	..	3	2	..	2	7
Alcoholism	..	..	..	1	..	..	..	1
Behaviour disorder	..	..	1	1	..	..	..	2
Undifferentiated	3	2	1	1	..	..	..	7
Total	3	3	9	14	9	5	7	50

It will be noted that no statement could be made, even as a tendency to a certain reaction type, in six of the cases in the lower levels. Tredgold and Griesinger, as has been pointed out, considered such cases as true insanity, and Kraepelin spoke of primitive reactions, such as screaming, rage, affect stupor, reactive depression and manic-like attacks, being present both in young children and animals. Barr reported the occurrence of insanity in mental defectives as early as the first year, and gave as the characteristics, dullness and apathy, which he termed incipient melancholia, or temper outbursts, which he considered mania. Zappert (37) cited seven cases of rapid dementia occurring in the third and fourth years in children, and Lutz (38) reported delusions and hallucinations in the sixth year, with suggestions of these in earlier years. It was impossible, however, to fit these cases into any classification other than hypokinetic, hyperkinetic, or one of the alternating or mixed forms. As we go higher in the scale, the various psychoses finally begin to separate out, and become more clear and defined. They finally approximate to the type of psychoses we meet with in the adult intellectual levels.

Many pertinent observations have been made in the literature, and noted in this study, in the differences between manifestations in the defective and the previously normal individual. Motor phenomena are more prominent ; they are more often episodic in nature, and disturbances of consciousness are more frequent. The reactions are more superficial, and the affective qualities are more easily determinable. Symbolisms are not so abstruse, and catathymic

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delusional formations are more evident. Pure content disorders are, of course, much less frequent and striking, since the defective has not the capacity for complex associative and symbolizing activity. Melanie Klein (39) from her studies of psychotic children, states that schizophrenia is less striking in them because at an early age such factors as severance from reality, lack of emotional rapport, inability to concentrate, excess activity and stereotypy are not so far from the normal for this period of life. The individual formerly of a normal intellectual level who becomes psychotic may show regression to the comparative level of the lowest grade idiot, and with only the cross-sectional study of the reactions it is frequently impossible to differentiate between a deteriorated schizophrene and a low-grade psychotic defective.

It is interesting to follow, through the various mental age levels, certain disorders involving somatic concern as the most prominent feature :

> M.A. 4–5 : Patient complains of pain in the ear. (Jealous of the attention another defective is receiving for an otitis media.)
>
> M.A. 7–8 : A patient suffers terrible pain because his blood is frozen.
>
> M.A. 9–10 : A patient suffers pain because a hammer fell on him from a building.

As the power of elaboration, comparison and self-criticism develops with increasing intelligence, it becomes more essential to adhere to the reality principle and to rationalize deviations. Thus such reactions as hysteria and hypochondriasis, as we meet them in individuals of normal intelligence, are formed. The first patient stated only the occurrence, the second gave an absurd explanation, and the third a plausible explanation of his pain.

The influence of increasing intelligence on the productions in a reaction type is most strikingly shown in the content disorders, notable paranoid reactions.

> M.A. 6–7 : They watched me on the street. They said I steal everything . . . my sister tells lies about me . . . they scratch me. They put snakes in my belly . . . they take babies out of my mouth with a spoon.
>
> M.A. 8–9 : My mother (dead) tells me to be good . . . they put poison in my meat. Sea-gulls follow me around because I'm good . . . they play church music for me.
>
> M.A. 9–10 : My wife goes out with other men . . . she piped my room to kill me with gas. The radio told me he was going to kill me . . . he sent electricity through me with a machine. Maybe because I am the mayor and the governor. Because I believe in the Lord he told me to build my own heaven and hell and hospital.
>
> M.A. 10–11 : The neighbours put microphones in my room. They were in league with the black legion, and they shadowed me all the time. They can read my thoughts. I suppose it's by mental telepathy. They used my radio wave machine to get information from me.

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The mechanism of projection is evident throughout these delusional formations, and can be noted even in the lowest grades of defectives. The elaborations however, depend on the concepts and ideas which come with increasing development. The general trend of the associations are affect determined, but their specific forms and complexities are determined by individual intellectual factors. Other psychopathological mechanisms may be similarly followed through the various mental age levels. In the lower grades of defectives affective reactions are simple, but as development increases complex emotional states are formed with correspondingly complex manifestations.

To the difficulty inherent in the determination of the reaction type in any psychotic individual is added the uncertainty in classifying those of the lower mental age levels, a difficulty which has appeared throughout the literature on the subject. In 12 references where figures were given of the relative frequency of the schizophrenic and manic-depressive reactions in mental defectives, 5 believed the latter predominated, and 7 that the former were more frequent. The cases here reported show a definite preponderance of the schizophrenic reaction, but the cases are too few to support such a general conclusion. Where the formal classification of reaction types is dispensed with, however, and the psychoses are considered as the primitive reactions, agreement becomes general. Of the 12 references mentioned, 10 gave the hyperkinetic type as predominant and 2 considered them equal. In the cases here reported, 26 were of the hyperkinetic type, 14 of the hypokinetic type, and 10 were of the mixed forms. Essentially similar results have been obtained in the study of the psychoses of children and of primitive peoples.

Much difference of opinion has also been noted regarding the recoverability of these disorders. In our cases a tendency to deterioration and final adjustment at a lower level was evident in the greater number, manifest especially, in the hypokinetic type. Each patient, however, in prognosis as in other aspects of the study, must be considered according to the material which is presented, and those factors in the individual making for recovery and those hindering a successful adaptation must be utilized.

Many other factors considered in the study of these cases must be deferred for a further report.

Summary and Conclusions.

A short historical survey of the literature on psychotic reactions in mental defectives is presented, the various classifications offered are described, and the different approaches to the study of the subject delineated.

Psychosis with mental deficiency as a clinical entity is criticized, since it includes a wide variety of disorders, which must be considered in themselves as to course, duration and termination.

Fifty cases are presented, being classified according to reaction type and

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mental age. From the study it is suggested that a graded series of reactions can be drawn up, the complexity of which varies with the intellectual level. The lower levels of intelligence offer fewer forms of expression, and in the lowest grades only the primitive reaction types can be distinguished, such as the hyperkinetic, the hypokinetic, and the alternating or mixed types. As intelligence increases, the picture of the adult types of reaction becomes more and more closely approximated.

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