REPORT OF THE MASSACHUSETTS COMMISSION

The commission, of which Dr. W. E. Fernald was chairman, appointed by the governor of Massachusetts in pursuance of an act of the General Court, on April 10th, 1910, and directed to investigate the question of the increase of criminals, mental defectives, epileptics, degenerates and allied classes, found as a result of their investigation, contrary to the general impression, that crime, insanity, feeble-mindedness, epilepsy and pauperism are not increasing at a greater ratio than the ratio of increase in population. As to crimes, the commission states in its report that if he total number is considered, the figures indicate a diminished ratio, but when the different classes of crimes are studied, it is seen that there has been an increase in the more serious offenses. A large percentage of the murders committeed during the past few years, in the opinion of the commission, has been committed by foreigners recently admitted and so not truly representative of the general body of the community.

While the ratio of insane patients treated in the hospitals has increased over that of the population and while there has been a large increase in the number and ratio of the feeble-minded and epileptics under treatment in the institutions during the past twenty years, this increase is explained by the enlarged accommodations for patients and the better methods of treatment resulting in an increased expectancy of life and accumulations from a lesser discharge rate among the insane and feeble-minded. The great increase in the visible number of the latter the community the commission regards as a result of a more common recognition of this form of defect and not as an actual increase in the ratio of feeble-minded persons to the general population.

As to pauperism, evidence was found of a decrease rather than an increase.

BOOK REVIEWS

L'INTELLIGENCE DES IMBECILES. Alfred Binet et Th. Simon. L'Annee Psychologique, 1909. Pp. 1-147.

In this lengthy article the authors report on a number of

general observations and tests on feeble-minded (the term "imbecile" is used generically for all grades) and in conclusion give a schema of thought intended to explain the difference between the feeble-minded and the normal mind. The study is of interest not chiefly because of a thoroughness of observations and testing, for this has been done mostly in a rather perfunctory way, but because of the many brilliant analyses and interpretations. They point out that we have given in the study of the feeble-minded a new method of psychogenics. Assuming, as they seem to do, that the different grades of feeble-mindedness may be regarded as representing different degrees of normal development, we may group the former into the different successive grades and then study the development of any single mental process from group to group. In this manner they propose to study the following: (1) Character; (2) attention; (3) voluntary effort; (4) movement in writing; (5) intelligence of preception; (6) pain; (7) association of ideas; (8) intellectual activity compared with the level of intelligence; (9) arithmetical faculty; (10) reasoning; (11) suggestibility; (12) wrong ideas and judgment.

The question as to the relation between character and intelligence is an old and unsolved one. The authors single out only two elements of character, docility or submissiveness, and its opposite, hostility or resistiveness. From their general observations on the feeble-minded they note that neither element is characteristic of any grade of intelligence, but that both are found in all grades. On attention they give only general and no new observations. Voluntary effort is tested in four different ways: (a) Reaction time; (b) rapidity of movement; (c) number of words given in a fixed time; (d) immediate memory for numerals. A usual form of the reaction time experiment was used, and they conclude that this is a good measure of attention. Turning the handle of a music box was employed to determine the speed of movement by finding the time per turn. Want of emulation is the cause of the slow speed found with defectives. Two factors involved determine the number of words given in a fixed time, good will or zeal, and extent of vocabulary. Fee-

ble-minded fall considerably below the normal in this test, which shows that the former are especially incapable of effort directed towards ideas. The test on immediate memory for numerals heard is regarded as of indisputable value in showing a week attention. In the movements in writing a series of grades of writing is obtained with defectives of different grades that runs quite parallel with what is found with normal children of different ages. Thus, in general, idiots make mere marks only. Low grade imbeciles make mere marks and some very rough forms. Middle grade imbeciles approach the forms of letters in some of their markings. High grade imbeciles make some letters and figures distinctly. (This is the reviewer's description of the specimens the authors give.) Sense perception is apparently a complex of several processes, space perception seeming to imply, for example, sensation, association, comparison, fine perception of differences and resemblances. It is difficult to understand how an idiot can be capable of it. The "intelligence of perception," in the authors' terminology, was tested by determining the degree of sensory discrimination for weights, and for different lengths of lines. Allowing for inattention and lack of effort, the feeble-minded show a delicacy of perception in the sensory discriminations made that is not much below the normal. This result is difficult to explain psychologically. The biological explanation of great utility for life is vague, psychologically considered. The sense of pain probably involves two factors, physical sensation, reinforced by the psychic reaction of fear, imagining of danger and restlessness giving pain its volume. The frequent apparent great dullness of the sense of pain in idiots is explained by the absence or deficiency of this psychic reaction. Testing the association of ideas consisted of determining the association time and the character of the associations. A word is pronounced to the child and he gives the first word this suggests. The time is taken with a stop-watch. The results often show a shorter association time with the feeble-minded than with the normal. (This is quite in opposition to what other investigators have found.) This is explained on the basis that normals do not really give the first word suggested, but choose, which is

a mark of intelligence. From the character of the associations one can distinguish only the extreme grades of defectives. Activity of intelligence and level of intelligence are ordinarily confused in that a very active intelligence is taken to be of high grade, and an inactive one of low grade. Their observations give striking exceptions to this. Some defectives are very loquacious, are apparently full of ideas, show a very active intelligence, but are yet of quite low grade. The arithmetical faculty involves two distinct operations, a sensorial process of perceiving the plurality, merely, of concrete objects, and a verbal process of applying the number names to these pluralities, counting them and making them undergo various arithmetical modifications. The former animals possess. Tests that do not involve the latter show that the feeble-minded are not so much below the normal in the sensorial process of perceiving plurality. Their great lack in arithmetical ability is due to a deficiency in the other factor. They have no idea of the meaning of the number names. Reasoning and intelligent acts in general were tested in three ways. First, with pictures. The number of things enumerated in a picture is a pretty good index of the grade of intelligence. In general, low grades simply enumerate the things seen. A higher grade adds description, and a still higher grade may give interpretations of the subjects of the pictures. Second, in defining words. Three grades of definitions, representing three grades of intelligence, are obtained. (a) Mere repetition of the words to be defined. (b) Definition according to use of the things defined; (c) Definitions better than according to use. Third, a "game of patience." A card is cut into ten pieces which the child is asked to put together again, after a copy of another card intact. The time taken is no good indication of the grade of intelligence, but the manner in which the task is attempted is some indication. The greater suggestibility of the feeble-minded is shown by several simple tests, including what would usually be called hypnotism. A picture was shown two defective children who were then asked suggestive questions about it to be answered from memory. The questions were about things not in the picture. Normals accept the things as present thus

suggested about half the time. One of the defectives always did so, the other only a little less often. Feeble-minded are nearly always subject to the suggestion in such questions as "Is it not so?" and the like. In another test a bowl of pins is emptied on a table before some feeble-minded children and they are asked to put them into the bowl. When the task is completed the bowl is again emptied but the command to pick them up again is not given. Usually the children proceed to do so through the force of the suggestion given in emptying the bowl. Several instances of hypnotic suggestions are also reported. They observe two kinds of suggestibility: (a) suggestion involving ideas and hallucination, and (b) suggestion involving only acts, speech, imitation. Feeble-minded are subject to both kinds, but there seems to be no indication of a regular relation between degree of suggestibility and grade of intelligence. As to wrong ideas and judgment, it is evident that feeble-minded have but little judgment, but it would not follow from this that they are more subject to erroneous ideas. Yet the latter is the case. Wrong ideas are of three kinds: (a) inexact use of words, as found in senile dementia and aphasia; (b) systematized delusions, as found in melancholia; (c) wrong ideas due to defect of attention, reflection, and ideational control, as found in feeble-mindedness. The feeble-minded make false statements because they adhere to the first suggstion that occurs to them. They have a better imagination than they have ability to control it. There is no regular relation between the prevalence of wrong ideas and grade of intelligence.

What, now, is the essential difference between the mind of the feeble-minded and that of the normal? The general impression one gets is that the difference lies particularly in the intelligence. But this is a vague term which we understand only very inadequately. The authors offer a schema of thought which is to answer this question. They point out that thought is made up of three distinct elements: (a) a direction; (b) an adaptation; (c) and a correction. All thinking requires a directive idea which, in carrying out any mental or motor act, is a veritable order that we give ourselves, although we do not always do it

consciously. With the feeble-minded this directive idea is deficient in two ways. First, it may be entirely absent because the task in hand is not understood. Second, it is present at the beginning, but does not continue. The directive idea alone does not imply progress of thought. This latter is the function of adaptation. The nature of the ends we choose is determined more by our emotional and instinctive life than by our intelligence. But what the intelligence does is to combine the means to obtain the end. This is its proper function and constitutes adaptation. It is perhaps needless to say that the feeble-minded lack this ability to combine means to obtain an end. The third element in thought, correction, has been called by various other names. It is essentially a faculty of control having for its object our own activity. In adaptation the means to an end are found, and in correction this end is judged. In fact, control intervenes to assure us that the means found in adaptation are adequate. Correction is at fault in the feeble-minded.

It remains to be seen how much this schema of thought, rather inadequately stated in this brief review, can aid us in the study of the feeble-minded. On first thought, it seems to the reviewer that it represents rather a new description of some of the important and essential differences between the feeble-minded and normal mind, many features of which we have, however, long recognized and have been accustomed to describe in other terms. However, the authors are undoubtedly right in contending that we are as yet at least unable to adequately describe feeble-mindedness in terms of the old categories of memory, attention, judgment, reasoning, etc. F. KUHLMANN.

MOTO-SENSORY DEVELOPMENT. Observations on the First Three Years of a Child. George V. N. Dearborn. Baltimore; Warwick & York, Inc., 1910, Pp. 1-215.

In this book are given the observations on the development of the author's child, a girl, during the first three years after birth. It differs from similar studies by Perez, Preyer, Moore, Shinn, Major and others chiefly in the fact that the observations are all given apparently in the form of the original notes taken

daily or at least weekly, without any attempt to arrange and discuss them systematically. Thus, they are grouped chronologically from the first to the 1095th day. Copiously scattered throughout the text are comments on the daily observations. These are given in smaller print for the most part. The last ten pages of the book are devoted to general "Inductions", a "Chronological Epitome of the Observed Development", arranged by weeks, and an "Alphabetical Arrangement of Various First Appearances" of activities in the child's development, and an index. The manner of recording the observations, as well as their authorship, insures their scientific value, and readers will have no hesitancy in accepting the author's modest claim that "in general the facts reported in these notes are reliable, however much at times their interpretation may be at fault." Perhaps a little more careful editing of the notes might have improved the presentation and made the essential facts observed more readily accessible. The author does not always keep observation and interpretation separate, and observations of a personal rather than a scientific interest are also often included in the notes, both of which would have been better placed in the smaller print regularly given over to comments. The book is not suited, and obviously not intended for the general reader. It merely gives the raw material of observation with chance discussions. But readers of the Journal will find it a valuable addition to a body of observations much in demand by all students of feeble-minded children. These more minute facts concerning the earliest development of the normal child will soon furnish us the materials by means of which we shall be able to diagnose mental defect at a much earlier age than we have so far been able to do. The importance of the earliest possible diagnosis we all appreciate.

F. KUHLMANN.

TESTS FOR PRACTICAL MENTAL CLASSIFICATION. W. Healy, M. D., and Grace Fernald, Ph. D., Psychological Review Publications. The Psychological Monographs, Vol. XIII, No. 2, March, 1911. Pp. 1-53.

In this monograph the authors give an account of twenty-two

mental tests which they have used in the Juvenile Psychopathic Institute of Chicago in making the mental examinations of children appearing in the Juvenile Court. The tests have been selected with the help of advice from many prominent American psychologists, and most of them have been used previously by others for the purpose of mental diagnosis. They have added a few new ones, and in nearly all cases made some modification of the others. Their aim has been to get a set of tests particularly adapted for the examination of children over ten years of age, and brighter than the institutional type of feeble-minded. For the others the Simon-Binet system of tests was used.

Space here will not permit an adequate description of the individual tests, but a brief enumeration will give some idea of the nature of the tests that have been selected. Tests I and II are picture puzzles. Parts of complex pictures and also geometrical forms are cut out from the pictures and mixed up. The child is asked to reconstruct the pictures by replacing the parts cut out. Tests III and IV are form puzzles. In III a rectangular frame must be exactly filled with five rectangular pieces of different shape and size. The test was suggested by Prof. F. N. Freeman of the Chicago University. Test IV is similar, but more complex, suggested by Prof. W. F. Dearborn of Chicago University. In Tests V and XIV the task consists of opening a "puzzle box." In each case the box may be opened by working a series of different kinds of locks in a certain order. The boxes are similar to puzzle boxes used by Thorndike, Kinnaman, and others in studying animal behavior. In Test V the child is given the box and simply told to open it. In Test XIV he is told just how to open it, thus making the two tests quite different in nature. Tests VI, VII, VIII, XII, and XIII are memory tests. Test VI is to test the accuracy of memory, a complex picture being used to memorize and describe from memory. It is an adaptation from tests used by W. Stern and many other German students of this question. Test VII is one of Binet's test of memory for geometric forms. In Test VIII the task consists of learning the associations between geometric forms and numerals. A series of nine forms, each with a numeral, 1 to 9, is shown the child. Un-

der this are arranged the forms alone in irregular order. The child must write in the corresponding numerals for several blanks, which he will learn to do the faster the more readily he learns the associations between forms and numerals. The original form of the test was designed, I think, by Dearborn. Test XII tests the memory for a passage the child himself reads, and XIII does the same for a passage that is read to him. The amount recalled is determined in the usual manner of this sort of test. Tests IX X, and XI are similar in nature, and test chiefly the power of visual imagination. In IX two lines crossing in the form of a large X are shown with numerals 1 to 4 placed in the angles made by the lines. Then the angles alone of the dissected X are shown and the child must fill in the corresponding numerals. In Test X four lines cross at right angles as in the children's game of tit-tat-to, and the angles and parts are numbered in regular order from 1 to 9. The procedure is then as in IX. In XI a code "used for secret correspondence during the civil war" is used. It combines the cross lines of IX and X, the angles and parts being now filled with the alphabet instead of numerals. Each set of cross lines is duplicated adding a dot to each angle and part so as to make up the twenty-six places for the alphabet. This arrangement is first shown the child; then a series of these angles and parts without the letters. To get the message this series gives the child must fill in the corresponding letters from his imagination. In each of these three tests the numerals or letters are arranged in a regular order that is readily grasped, so that the memory factor is reduced to a minimum. Tests IX and X were suggested by Dr. D. P. MacMillan. X has been regularly used by Dr. F. G. Bruner in examining Chicago public school children. Test XV is a familiar association test in which the child gives a word as quickly as he can that means the opposite of one pronounced to him. The association time is taken with a stop-watch. XVI is a motor test suggested by Prof. G. M. Whipple, in which the child taps as rapidly as he can with a pencil in each of a group of squares for thirty seconds. XVII is a writing test in which the child writes a standard sentence and his name. In XVIII the task is number work based on

the work of the grade in which the child was last, the nature of which is not further indicated. XIX is a reading test likewise "suited in difficulty to the grade which the child has reached in school". In XX the examiner plays a game of checkers with the child. In XXI the child answers questions involving a moral judgment on situations described to him in short stories, which are borrowed from Prof. F. C. Sharp who has used them in a study on the moral judgment. XII is termed an "Information" test and consists of some seventy-five questions aimed mainly to bring out the child's mental content.

In most instances fairly detailed directions are given for conducting the tests. Methods for scoring the results are also indicated. Upon the basis of the results obtained the child is cassified under one of thirteen classes as follows:

(1) "Considerably above ordinary in ability and information—the latter estimated with reference to age and social advantages.

(2) Ordinary in ability and information—the latter estimated with reference to age and social advantages.

(3) Native ability fair and formal educational advantages fair or good, but very poorly informed.

(4) Native ability fair and formal educational advantages fair and good.

(5) Native ability distinctly good, but formal educational advantages poor.

(6) Native ability fair and formal educational advantages poor.

(7) Native ability poor and formal educational advantages poor.

(8) Native ability poor and formal educational advantages good or fair.

(9) Dull from known physical causes, including epilepsy.

(10) Subnormal mentality—considerable more educability than the feeble-minded.

(11) Feeble-minded. (Moron).

(12) Imbecile.

(13) Psychoses."

It will be noted that this classification is not nearly as elaborate as the number of classes alone would indicate, as it involves only four grades of native ability above the feeble-minded, three grades of normal native ability.

The authors state emphatically that they regard these tests and methods as "strictly tentative," reserving for the future such additions and eliminations as further experience may dictate. This commendable spirit combined with the rare opportunities offered by the Juvenile Psychopathic Institute and Dr. Healy's own enthusiasm for the work should be a sufficient guarantee for most valuable practical results in a field where they are at present so much called for and needed. The problem of finding more accurate methods for the diagnosis of mental defect is not, from the nature of the case, one that can ever be finally solved, but one in which we can reasonably hope to make constant substantial progress. All students of the problem will agree that the tests the authors report here represent such progress. However, they suggest some criticism in the present form. One regrets the absence of norms for all of the tests, which would show us definitely the performances of normal children. Such norms the authors promise as forthcoming. But it is difficult to judge the value of the tests, impossible to judge them at all accurately, without such norms. How any child's native ability is to be classified on the basis of the results obtained, and without the norms to go by, will be determined after all by the judgment of the examiner as to what the normal child ought to be able to do in the tests, instead of by a scientific method from which the personal factor is practically or entirely eliminated. It is needless to argue that this judgment of the examiner will surely often be seriously at fault. The authors state that their "knowledge of the norms for the different tests is exceedingly unequal." It is not clear whether this knowledge refers to their own judgment as to what the norms probably are after having used the tests extensively on children whose mentality they did not otherwise know, or whether it refers to results obtained with children known from their school records to be normal, but which are reserved for future report. A second criticism is that a num-

ber of the tests are of such a nature that the personal factor of the examiner's judgment can never be elimnated. Such in a measure are Tests I, II, III, IV, V, XIV, XV, and in a lesser degree, XXI and XXII. In these it is not the time taken nor even the number of errors made by the child always that mainly determines his mental ranking. It is the character of the errors and the general manner of his performance that count for most. But this is a matter of the examiner's judgment. The ideal tests would be those for which the results can be stated in mathematical terms, and for which the performances of different normal children are definitely known to vary within narrow limits which have been exactly determined. F. KUHLMANN.