brought out by a survey of cases examined. Many children are retarded in school by virtue of undetected bad eyesight and faulty hearing; and all too common is the case of the child whose backwardness gradually and satisfactorily disappears after a tonsillectomy or correction of some other pathological condition. These all have tremendous possibilities for a better adjustment and, discovered in time, many cases of misfits are prevented.

The high percentage (14%) of cardiac conditions noted was fairly striking. Among the lesions found were those of mitral regurgitation, mitral stenosis, and several cases of cardiac arrhythmia of nervous origin. There can be but little question but that the average frequency with which pathological heart conditions are found is decidedly raised by the great number of cases found among these feeble-minded children. This is interesting additional evidence of the fairly constant physical inferiority associated with these children.

Malnutrition also shows prominently as characteristic of these children. In our series the percentage ran as high as twenty-two. The degree of malnutrition ranged from moderate to extreme. Indeed, so constant was this condition found, that we are coming to believe more and more that fatigue posture, the pinched, matured face of the ill-nourished child, is a fairly constant guide to the retarded scholar. It is apparent also in most of these cases, that absorption of toxins from intestines (in most cases the patient complained of habitual constipation) is an added factor, and adds greatly to the difficulty under which children of this class labor. Pathological tonsils and adenoids, and teeth needing dental care, were found in twenty-five per cent. of cases.

Where the above conditions are seen so frequently in retarded children, it would seem high time that the general profession and public at large awoke to the fact that the school child is not a mechanical apparatus, and requires a little better care than is given to the average domestic animal. The time has come when the mental hygienist must teach the public that psychiatry along the above lines is in many cases no longer a vague, intangible affair, but has a practical and definite foundation. We are at a stage where abnormal or retarded children, and adults, first, must be brought to normal physical standards; must receive the benefits of nutritional clinics if needed and must have corrected all pathological conditions. The ideal condition which eventually must come is the operation of a mental clinic, hand in hand with the other constructive clinics which, if not already established, should be, in every town for care of our school children.

Concerning the potential psychotic children, we can for the first time keep them under ob-

servation, correct, where possible, potential mental conditions before a stage is reached where hospital care is needed; or where active psychosis exists, make provisions for removal of the child from contacts where he may eventually do some distressing act before being considered, all too late, as fit for commitment. Such are some of the ends which it is the aim of this clinic to accomplish.

The foregoing tables have given some idea of the scope of cases presented at the Hospital and School Out-Patient Clinics. Both fields are rich in possibilities; one for doing treatment on actively defined psychotic states, the other for doing preventive work. The latter field offers without any doubt the real key to the modern solution and logical handling and consideration of mental diseases.

Judging from the demands made for the past six months on the clinic, the outlook for the future is reassuring. It labors somewhat under the handicap of having to transform in the minds of the public the idea of the "asylum" into a new and as yet not too well understood out-patient department of a hospital for mental disease. The seed sown in the past six months seems to have lodged in fertile soil for such work, however, and with progress in the future, keeping pace with the demands of the past few months, the clinic hopes to thrive, increase and aid in the solution of the problems associated with psychiatry.

SPINAL AND CISTERN PUNCTURE, WITH LAVAGE, FOLLOWING APOPLECTIFORM ATTACK IN PARESIS.

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IN the course of general paresis, seizures, often with evidence of cerebral hemorrhage, are seen. Certain of these seizures are spoken of as apoplectiform attacks and usually pass off in from a few hours to a few days. Oppenheim says, "We have no certain knowledge as to the causes of these attacks. It has been assumed that circulatory disturbances, small hemorrhages, local edema, or even a local aggravation of the underlying pathological process (encephalitis) may give rise to the symptoms."

The following case seems to indicate rather definitely the presence of a severe intracranial hemorrhage as a cause of such an apoplectiform attack:

CASE. J. R. W. Admitted April 6, 1920. Age 39. Widower. F. H.—Nothing remarkable. P. H.—At 18 he contracted syphilis. Ten years ago was admitted to Johns Hopkins Hospital with a gastrointestinal condition. For

the past ten years has been in very poor health. Four years ago is said to have had four intraspinal and several intravenous injections. P. E.—Right pupil large and irregular; left pupil smaller; neither react to light nor accommodation. Slight tremor of the tongue. Heart and lungs negative. Abdomen negative. Knee-jerks—Right increased, left normal. No other abnormal reflexes. Cranial nerves negative. Urine examination negative. Blood Wassermann negative with acetone, 4+ with cholesterin. Spinal and cistern fluids 4+ with acetone and cholesterin. M. E.—Patient has considerable emotional instability, blunting of moral sense and defect of both remote and recent memory. He knows that he has had syphilis, but does not appreciate that he has a psychosis. Has markedly defective judgment. No hallucinations. Delusions not prominent, but those which arise are expansive in type. Is irritable and fabricates freely. Diagnosis—General paresis.

April 20, 1920—Cistern pressure was estimated at 140 mm. Between April 20 and September 2, 1920, patient had sixteen cistern injections of serum prepared by Swift-Ellis method. On September 2, blood Wassermann and cistern fluid were both negative with acetone and cholesterin.

Treatment is discontinued, as both blood and spinal fluid have become negative. In spite of this fact, there is a rather marked mental deterioration which treatment can hardly be expected to modify.

December 8, 1920—Patient is almost always in a good-natured, very self-satisfied state of mind—greet people with considerable familiarity and has a very fine opinion, apparently, as to his ability and as to the quality of work which he is doing in the workshop. In reality, his work is poor and it is hard to keep him on any one job.

October 1, 1921—During the past 10 months there has been no essential change in the patient's condition. No further treatment has been given. The patient continues to show a moderate degree of parietic mental deterioration. He is unreliable, irritable at times, occasionally expansive, and shows poor recent memory.

November 8, 1921—Today patient complained of being dizzy, and fell to the floor. He was placed in bed, and on examination, it was found that his head was deviated to the right, and eyes showed conjugate deviation to the right side. Tongue, when protruded, was protruded toward the right. Extremities on the right side were found to be moderately spastic when attempt was made to move them. Patient was not unconscious; would answer questions after they were repeated several times, and was able to move all of his extremities. Appar-

ently could not move his head. Lumbar puncture was done at two different levels, and from both punctures bloody cerebrospinal fluid was obtained which coagulated rapidly. His right patella reflex gave a more prompt response than the left, but was probably not increased. No Babinski or ankle clonus present. Abdominal reflexes were present and active on the right side; absent on the left. Cremasterics absent. Right triceps jerk present and active; left absent.

November 10, 1921—Patient had a cistern puncture done upon him this morning and about 40 cc. of almost pure blood was obtained. He spent a very restless night, but this morning was much quieter. He shows no symptoms of pressure; has lost the contracture of the right side of the head, the deviation of the eyes and the hypertonicity of his right side.

November 12—Cistern puncture was done on patient this morning and a few drops of blood-tinged fluid was obtained under very low pressure. Lumbar puncture was done at the same time and a dry tap was obtained. About 20 cc. of saline was injected through the cistern needle and about 40 through the lumbar puncture needle. While injecting saline through the lumbar puncture needle, the pressure in the cistern increased and the flow also. About 15 cc. more was allowed to run out, and the needles were removed. Patient's condition is practically unchanged.

November 15—Cistern puncture was done on patient this morning. A few drops of slightly blood-tinged fluid was obtained under very low pressure. About 30 cc. of saline was injected through the needle and about 10 cc. allowed to run out. The returning fluid was only slightly turbid. Patient's condition remains unchanged.

November 19—Cistern puncture was done on patient this morning and a few drops of very bloody cerebrospinal fluid was obtained; 22 cc. of salt solution was introduced and the needle removed. Condition is very good at the present time; he has no evidence of spasticity and, physically, he is approximately the same as he was before this attack.

November 26—Cistern puncture was done this morning, and spinal fluid was perfectly clear and under approximately normal pressure. Condition remains unchanged.

December 16—One week after the last cistern puncture, the patient was allowed to get out of bed and walk around the ward. About one week later he returned to his work in the occupational therapy department of the hospital. Since that time, his work has been very poor and he is quite noisy and unable to concentrate very long on one job. Physically, his condition is the same as before the hemorrhage.

Blood Wassermann negative with acetone and cholesterin.

Spinal fluid Wassermann ++++ with acetone and cholesterin.

This case would suggest the value of spinal and cistern puncture as a diagnostic aid and as a possible therapeutic procedure in some cases of suspected intracranial hemorrhage.

EVALUATION OF INTELLIGENCE TESTS IN CRIMINAL CASES.

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No one who practised neurology at the time when there was no standardized method of measuring the intelligence in cases of retarded development can fail to recognize the great advance made in the study of such cases by the work of Binet and Simon. These authors, in 1904, in response to an educational requirement in Paris, formulated, by examining selected groups, standard tests by which to measure, in terms of mental age, the development of intelligence in children. This epochal work, in spite of early criticism, quickly proved its worth, and the original Binet-Simon Scale, with several revisions, still holds its own.¹

The Scale was intended for a measure of intelligence. Terman states that it is neither a test of insanity, nor of the emotions or the will, except as they are shown in testing the intelligence. It certainly was not designed as an aid to the courts in determining the responsibility or irresponsibility of the criminal adult. Even in the field for which it was designed, the test does not stand alone, as Terman adds, but will always need to be interpreted in the light of supplementary information. This supplementary information is listed in the blanks of the Massachusetts School for the Feeble Minded under the headings,—physical examination, personal and developmental history, history of school progress, examination in school work, practical knowledge and general information, economic efficiency, social history and reactions, moral reactions. Of these none is more important than economic efficiency. In the case of an adult the investigation of his ability to support himself is at least as important as the determination of his mental age as measured by the intelligence test.

Again, leaving the question of feeble-mindedness in abeyance, the establishment of a mental age of seven by the Scale no more warrants the assumption of irresponsibility than the establishment of a mental age of sixteen guarantees responsibility. This brings us to the question, What do we mean by responsibility?

In the business world the word *responsibility* means ability to meet contracts and pay bills.

With this meaning we have nothing to do in this connection. The other meaning of the word *responsible* is *accountable*, or *answerable*. In a way, every living thing is answerable for every action. The rattlesnake has to answer with his life for the injury he does, though he is not responsible in the criminal sense. He coils and springs by instinct. Presumably he does not know that it is wrong thus to injure the innocent intruder on his privacy. Not every kind of answerability, then, constitutes criminal responsibility.

For practical purposes Mercier's² definition of criminal responsibility is a fairly satisfactory one. He says that a person is responsible who is *rightly punishable*. In order to be rightly punishable he must will the act, intend the harm, and desire primarily his own gratification; the act must be done on inadequate provocation, and he must know and appreciate the circumstances in which the act is done.

The word *know* is so flexible a one as to require qualification. I may know that my friend mailed my letter last night because he told me this morning that he had done so. But in the eyes of the law my knowledge is only hearsay evidence. My friend is the one who really knows whether he has mailed the letter or not. Similarly, a child may know that an act is wrong because he has been told so, and yet he may fail to know it in the full sense of the word. To be fully responsible, as Mercier says, one must "know in the full sense of knowing the nature and quality and wrongness of the act." Sir Fitzjames Steven says that the idiot who cut off the head of the sleeping man for the fun of seeing him hunt for it when he woke, probably knew that it was wrong in the sense that it is wrong for the child not to learn its lesson. In a less extreme case the insane or semi-insane man may know in a sense that his act is wrong without realizing how wrong it is. This consideration brings up the question of limited responsibility.

Let us now take up the practical application of the intelligence test to the solution of these questions.

CASE 1. An uneducated Italian came to this country about eight years ago. He is now 28. He first worked, as water boy, in Maine, then on the railroad. Later he followed his father to Cambridge, alone, and went to work in a factory. He learned to tend his machine in the usual time, and proved a competent, steady and satisfactory employee. He supported himself and sent money home.

On the afternoon of the day of the murder he drank with other men in Boston. The evening he spent at a party of adults in Cambridge where he drank more. At midnight he went out with the musicians. An officer ordered them to go home, and in the ensuing altercation