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should be done at institutions where clinical and laboratory material is never wanting. We see a case presenting peculiar symptoms during life. Why not at least try to discover the cause on the post-mortem table?

DISCUSSION

Dr. Wilmarth: I think those of us who have been in the work some years realize what a hopeless task we have had in the study of this malady. We have never been able, I think no one has ever been able, to locate it as a distinct disease. The hope of epilepsy lies in the pathological laboratory associated with clinical observation. Many years ago an effort was made to establish a regular bureau of observation, which was to collect material from the different institutions, but the bureau did not materialize. Such as is done is now principally done by officers in institutions whose numerous other duties constantly interfere with their work. It seems as though every state could hire someone to do this work and give him an adequate salary. I doubt the expediency of a central bureau for this work. I doubt the advisability of any one man pursuing it. If four or five institutions could have officers who could get together and compare their work, I cannot help thinking that in a few years we should be in much better position to combat this dread disease, having a more thorough knowledge of its origin. Instead of spending time in alleviating, we might perfect more recoveries.

Dr. Smith: It would almost seem that any state that can positively number among its inhabitants one thousand epileptics could at least furnish pathological insight into the cause of that epilepsy. I wish this conference could furnish some influence that would enable us to bring that about in the states where at least that number occur.

RELATION OF FEEBLE-MINDEDNESS TO DISEASE

BY A. R. T. WYLIE, M. D., FARIBAULT, MINN.

Mental defect modifies the relativity of the individual in all its modes more prominently perhaps in the psychological, sociological and economical spheres but also in the pathological. And it is this last particularly to which we wish to call attention.

Feeble-mindedness is a morbid condition of the mind which renders it impossible to bring up a child to respond to his surroundings like a child of his own age in his own community. This condition is due to the imperfect or arrested development of the neurons of the cerebral cortex. They are fewer in number than in the normal brain and are irregularly arranged. They are imperfectly developed, as shown by the large nucleus and eccentric nucleolus of the pyramidal cells. These are often globular or pyraform in shape with the angles wanting. There are fewer dendrite and gemmules. There are also found cells like neuroblasts. There is pigmentation in the deep pyramidal layer, and the tangential nerve fibres are less in number. These conditions have been found most pronounced in the pre-frontal and the parietal association centers of Flechsig. Thus we have a basis and in a way an explanation of the chief characteristics of feeble-mindedness, dullness of sensation, deficiency of attention and perception; limited association, narrowness of mental fields, lack of judgment and deficiency of initiative and will power. These all modify to a more or less extent the course and progress of disease processes and our care and treatment in the handling of them.

The sense dullness of mental deficiency delays our recognition of disease processes so that we often do not recognize our cases until they are much farther advanced than with normal people. H. Y., an epileptic with spastic diplegia and choreoform motion, inmate of our institution for ten years, had been of good health. On October 30, 1908, she was indisposed and re-

fused her meals but was sitting up. The next day she was put to bed against her will and at 3. p. m. showed symptoms of collapse. Her temperature was 104.8 degrees; pulse, 120, but very weak at radials; respiration, 30. Strychnine and adrenalin were administered and condition improved. There was myosis but pupils responded to light. Conjunctiva had been noticed to have been rather yellowish for some time. Large mucous rales throughout the lungs. Diarrhoea with some blood. Abdomen not distended, not tender. Liver retracted. Bloody discharge from vagina. Skin muddy. On November 1st, was somewhat improved. Replied to "good morning". Temperature, 100.6 degrees; pulse, 120; respiration, 30. Coma returned and continued to the end. Conjunctiva white. Mucous and bloody stools. November 2, temperature, 101; pulse, 130; stools, same. Died at 11:20, p. m. Temperature, 103.8; pulse, 148 and respiration 44. At autopsy a few tubercles and some adhesion were found at apex of left lung. Liver hobnail and about one-half normal size. Left lobe very small. Microscopic examination showed cirrhosis and fatty degeneration. Diagnosis was given as cirrhosis of the liver with hepatic insufficiency.

Sometimes a disease may exist without symptoms, as Sollier, I think it is, mentions a case of gangrene of the lung which came to autopsy without a suspicion that such a condition existed. And no doubt some of our cases of sudden deaths belong here. Dull sensation, it seems to me, accounts for the common absence of cough in our cases of pulmonary tuberculosis. Physical signs show that there is plenty of secretions in the bronchia to call forth the reflex. So the sensitivity of the bronchial mucous membrane must be so dulled that the initiatory irritation never arises. Perhaps the effect of dulled sensibility is more noticeable in the realm of the pain sense. How often is our attention first called to a decayed tooth when it is badly ulcerated and the face swollen. Again we oftentimes do not make use of a local anaesthetic (cocaine) since the trouble attending its use is greater than the pain from which we would wish to protect our patient. Ingrowing toenails have been removed without a wince on the part of the patient. This has its good side. Our patients

are not in as great discomfort in their sicknesses. One of my patients in the second stage of smallpox was so sore that the only comfortable position she could get into was on her hands and knees, yet she was playing games with one of her fellow sufferers. Many of our children even seem to enjoy poor health. One of my girls was much worried for fear she would not have smallpox when many of her friends were thus afflicted. Her hopes were finally realized and from the extent of the disease she must have been very well satisfied. This sense dullness leads to the enjoyment of strong sensations. I have one instance in which this seemed to have a stimulating psychological effect. One boy who was a good worker but did not or would not talk, came to the dentist chair one afternoon when I operated successfully with the assistance of half a dozen others and a bottle of chloroform. For a year afterwards he never would stay within speaking distance of me, then, his fears being overcome somewhat, he always saluted me as often as he met me with a hearty "Good morning, Doctor".

Defective vision is fairly common among our children, but correction of refractive errors does not seem to bring much benefit except among the higher-grade pupils. One boy, however, who was very near-sighted, after having a double tenotomy operation, was fitted with a -15.00 sphere. This has enabled him to learn to read. The dullness and abnormalities of taste are especially noticeable among the lower grades and particularly the desirability of a strong sensation. How else can we account for the eating of and even the preference for garbage, dirt, dust, rags, stockings and skatophagia. Some of our children have passed pieces of stockings and one a bandage a yard long. One of our eastern institutions has a small snake that one of the children passed. One of our children seized a small dish of pins and swallowed a number of them. After a liberal diet of potatoes thirteen were recovered. Bolting of food is the rule among the lower grades so that ground food is necessary in order to nourish them and protect them from danger. Some years ago one of the custodial girls was thought to have had a spasm at the breakfast table. She was removed and a physician called, but

before he reached her she was dead. At autopsy an insufficiently cooked half apricot was found securely wedged in her glottis. She had died of strangulation. As also showing the lack of the feeling of discomfort, it might be well to tell of a boy who was detailed to help the storekeeper in issuing weekly supplies. He came to the dispensary one noon complaining of something in his throat. On inquiry it was found that this condition had existed for twenty-four hours and he had been unable to retain even water. It was found to be a piece of meat lodged part way down his gullet. This was dislodged by means of a stomach tube. In this connection and as bearing on the nature of milk as a food it might be well to relate another history. A boy was sent to the hospital with the symptoms of acute indigestion. He did not respond to treatment but the condition kept up. Eventually he threw up a white mass having the marks of a cast of the pylorus. On examination this was found to consist of milk curd with starch granules. The boy promptly recovered.

Defective nutrition and difficulty of cleaning are especially conducive to the early and quick decay of the teeth of the feeble-minded. The quickness of decay is especially noticeable, a month often showing marked changes in this respect. This, in turn, interferes with the nutrition of the child and a "vicious circle" is established. Peculiarities of appetite are often noticed, some children limiting themselves to one or two articles of diet to the exclusion of all others. A boy five years old was brought to our institution recently in a markedly rachitic condition, whose diet had consisted solely of oatmeal and milk because he would not take anything else. Continual perseverance on the part of his attendant has succeeded in getting him to take everything that our bill of fare affords. Some years ago a child—a spastic paralytic—was brought to us who refused to take anything. Whenever food was presented to him he would shut his jaws tightly and keep them thus. Various "stunts" on the part of his nurse would finally get him to take something. This peculiarity had existed during his whole life and persisted to the end.

Infectious diseases play a prominent part in the medical history of our institution. This is accounted for, no doubt, by

the fact that the immunity of our children is low and when infection is once brought in it is especially hard to get rid of it. Diphtheria has been with us for some years, a case cropping out now and then, but fortunately it has been of rather low virulence. Our method of fighting it has been of taking cultures. Of 400 cultures taken in our institution at various times about ten per cent. were positive. The figure usually given for normal people is eight-tenths of one per cent. One girl was kept in quarantine for six months waiting for a negative culture. She at no time had clinical diphtheria. Tuberculosis is a common cause of death in our institution and seems to be increasing as the years go on. Of the 572 deaths which we have had since the institution began, in 178, or 31.1 per cent. tuberculosis figured as a cause. Computing by decades, we find 23.4 per cent. in the first, 24.5 per cent. in the second and 38.8 per cent. in the third. Physical signs as found on examination also seem to indicate a high percentage of infected cases. We are hoping that with improvement in the method of diagnosis we may be able to determine this more exactly. As pneumonia is the old man's friend so tuberculosis seems to be the friend of the mental defective.

One might think that in a group of persons showing as many irregularities of development or stigmata of degeneracy as the mental defectives that malignant tumors would be more common especially if the Coluheim hypothesis of misplaced embryonic cells were true. But the reverse seems to be the case. In some two thousand cases we have found malignant tumor only five times, twice involving the stomach, once the head of the pancreas, once the uterus and once the face. One of these was admitted with the condition far advanced and two of the cases were epileptics. The fact that the majority of our children die before they reach the age when cancer is most common, tends to make this condition rare. We have found that 78.9 per cent. of our deaths have occurred before the thirtieth year. Seventy per cent. before 25.

Many of the children, of course, do not talk and if the frenum of the tongue is short, the parents think this backward condition is due to the tongue tie. I have been asked to remedy

this condition several times but have never noticed any improvement in speech as a result.

The deficiencies in association, perception and memory render the subjective symptoms unreliable when present and in many cases they do not exist. So that we have to depend for diagnosis almost entirely upon objective symptoms. This has led one physician to remark that a course in veterinary medicine would be excellent training for this work but one of my medical friends claims that this is an advantage since one is not misled by the unreliable statements of supposedly normal people.



SPECIAL CLASSES IN THE CLEVELAND SCHOOLS

BY MISS GRACE M. BOEHME, ROCHESTER, N. Y.

The great need and value of the special classes for defectives is becoming more recognized each year, but in spite of the evident proof of their success we constantly hear the questions:

1. Are the special classes, which necessitate more expensive teachers and equipment, really worth while?
2. Do not the majority of really defective children eventually become state charges?
3. If not placed in an institution do they not marry and continue to fill our classes?
4. Is not the unfortunate child stigmatized by placing him in a special class and how can the objections raised by the parents be overcome?

In answering the above questions let me state: We have maintained the special classes in our schools for the last four years and our observations are based entirely upon the result of our experience. I would meet the questions of the special classes being worth while in the following way which I think will prove satisfactory to the parent or tax-payer who sees in the welfare of the normal child the value of efficiency of the future citizen. The effect of the subnormal child over an entire grade of normal children is appalling, for, with the normal child's keen sense of imitation, we find indescribable harm done and habits formed which oftentimes mar the future life of the bright child. Often a defective child will pollute an entire class by his licentiousness. Often the defective child so disturbs the discipline of the grade as to make valuable study impossible. If the teacher is over-conscientious, many times the normal child will be slighted and neglected because of special help which the teacher feels must be given to the atypical child; and, again, if the teacher has not the interest of the child at heart it is often allowed to sit idle for hours at a time getting more and more dis-