

an oculo-lethargic type. He had afterwards a phase of somnolence with slight hemichorea which lasted about two months, then a phase of diurnal somnolence and nocturnal insomnia for a month, then finally a phase of constant insomnia and excitation with mania, especially at night, which still exists. He had to go to an asylum. The mania was generally in the first part of the night, sometimes after a short sleep produced by large doses of hypnotics. He presented the ordinary symptoms of acute mania and never was still, was threatening, gesticulating; and performing monkey-tricks all the time. There were no confusion and no hallucinations. At another time he was furiously maniacal, threw himself against the wall, broke a window and tried to strangle himself, shouting "Death! Death!" and cursing those who essayed to master him. He seemed then to have very transient hallucinations at rare intervals, and these did not worry him, but made him angry. All these accesses of his trouble were present for about three hours at a time, and were followed by a calm sleep lasting until morning. At the present time the boy, in spite of an excellent appetite, is very emaciated. He behaves as a hypomaniac, is inattentive, disturbing, jeering, accusing, but wheedling and affectionate. For the rest he is very intelligent, capable of reasoning, and without antecedent pathology. The ocular symptoms have disappeared some time. A slight choreic instability of the left arm persists.

What is the significance of these psychical forms of epidemic encephalitis? The toxic pathogeny of acute delirium and mental confusion is classic. The symptoms of toxæmia were evident in the patients. They were such in the second case that the diagnosis of typhoid suggested itself. In the three first cases no psychical sequelæ were ascertained. It does not, then, seem necessary to invoke for them a special cortical localisation of the infectious processes. It is necessary to note, however, that none of the patients presented any Parkinsonian symptoms. In the child the toxic phenomena were not evident.

We are still ignorant whether it is a state of infection. But what we know of the persistence, sometimes very prolonged, of the virus of encephalitis and of sudden awakenings of the "fire which smoulders" (Netter) invites us to keep in mind that possibility, although everything seems to indicate that the infectious processes are extinguished.

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*Mental Disturbances in Lethargic Encephalitis. (Journ. of Nerv. and Ment. Dis., September, 1920.) Abrahamson, I.*

The toxins of lethargic encephalitis attack all cells, but nerve-cells are the most vulnerable. Irritability both to internal and external stimuli diminishes. Thought is a function which must suffer in this disease, and lethargic encephalitis invariably gives rise to mental disturbances. Somnolence and insomnia, mania and depression, delirium and coma, confusion and catatonia may all be observed, but these are essentially variations in the severity and phase of its disturbance, not in its nature. At the onset of the disease there is a variable period in which the patient finds increasing difficulty in attending to his work. Next a time of yawning ensues, and then the eyes close. As a rule the patient lies on his back with closed eyes as if in deep sleep. His

pulse, temperature, and respiration may all be of normal character. Although he may display neither conscious nor unconscious activity, yet he may respond immediately when questioned, and his short answers show no loss of memory or orientation. Having answered he resumes his seeming sleep, his attitude expressing a desire to be left alone. This somnolence may last for days or weeks, and then usually gradually disappears, leaving a state of self-commiseration, weariness, and sleeplessness which wears off slowly. The somnolence may deepen into a stupor, from which the patient is not easily roused to conscious response. In the night a restless delirium often appears, spontaneous movements and sounds being made. In the quiescent intervals the patient lies like a log, his face mask-like. This state may pass into one of catalepsy and catatonia. This condition may pass away, leaving confusion, faulty orientation, and memory-loss of the Korsakoff type, with poverty of thought, and lack of initiative. The stupor occasionally deepens into coma, which, as a rule, ends fatally. The coma may also appear somewhat suddenly, and be due not so much to the specific poison of the disease as to acidosis. McNalty attempts to explain these mental disturbances by the blocking of visual stimuli through closure of the eyes by ptosis. The blind tabetic is, however, not somnolent. The depth of the somnolence and also its duration are unrelated to the severity of the lesions, and while the lesions persist, the somnolence, as a rule, passes. The mental disturbance is typical of an intoxication, and is due to the specific action upon the cerebral nerve-cells of the toxin or toxins of the protozoa of lethargic encephalitis. The organ of expression of psychic processes is the musculature, but in this disease no perceptible muscular change may occur. The full bladder and crumpled bed may be ignored, although sensory stimuli stream into the brain. In the earlier stages, judging by the responses, the associative processes, though slowed and restricted, are still orderly. Later the commanded movement tends to repeat itself (to perseverate), and the required attitude to persist (catatonia). This morbid "set" is mainly due to a lack of associative capacity. This lack would take place if the toxins raised the resistance at the synapses to a height which prevented all ordered flow of association. This synaptic interruption probably occurs, for at this stage arise the hallucinations and delusions which are associated with the stupor. It may be that the synapse suffers earliest and most in the attack. Any poison, however, which reduces the vitality of the cell heightens the resistance at the synapse. The persistent sequence of severe intoxication, the psychoses, the Korsakoff phenomena, and even the protracted recovery, show that in addition to nutritive changes actual structural disturbances may also occur—a true inflammation with destruction of the processes of the brain cells.

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*The Cerebro-spinal Fluid in Epidemic Encephalitis. (Journ. of Nerv and Ment. Dis., October, 1920.) Boveri, P.*

In this study 16 cerebro-spinal fluids were examined at different periods of the disease, from the fifth to the thirty-fifth day. Thirteen belonged to cases of the classical type of lethargic encephalitis; 2 were