furthermore, affords a ready means for ascertaining data for purposes of comparison with the cases of other observers. It is thus useful both in the practice of medical, and especially surgical, art, and in the compilation of the records which further the advancement of science.

AN ANOMALY IN SENSIBILITY DURING ACUTE SEROUS MENINGITIS: A CLINICAL NOTE

By Tom A. Williams, M.D.

After being thrown from a trap when intoxicated, a farmer of sixty-one, during ten days gradually became delirious and quadriplegic with rectal and vesical incontinence. He had been a hard drinker; and for two years had suffered from numb feelings and coldness of hands and feet without pain or loss of power.

Motility.—On examination ten days after the accident, there was complete paralysis below the second thoracic segment and also of the right triceps innervation, other arm movements being conserved, although much impaired, especially distally. Facial and neck movements were strong.

All *reflexes* were then absent, with the exception of a slight dorsiflexion of the left great toe. In his delirious state the *sensibility* could be examined only roughly; but it was clear that the right side was quite insensitive to pain and temperature as high as the second intercostal space, although no abnormality was then detected on the left side. Bed sores began to appear.

The Anomaly.—It was only five days later, after the deep reflexes had returned and the great toe had ceased to extend, that there was detected the curious anomaly of dissociated sensation which it is desired to record. On the left side as high as Th 2, a sensation of coolness was immediately reported when he was touched with an object at a temperature of 60° F., but when he was touched with a tube containing ice, no sensation of cold whatever was left, the patient immediately calling out with pain, crying "it sticks."

He could appreciate the painfulness as well as the temperature of a tube of boiling water; and felt no pain, although he distinguished the warmth of a tube a little over blood heat. There was marked hyperesthesia to pin prick and to deep pressure over this area. Light touches could be felt on both sides, although less easily on the right, especially distally. The sense of attitude was completely lost in both lower limbs, and appeared to be impaired in the upper limbs.

Without going into further detail, although the case presents many other points of interest which are reserved for a future communication, it was emphasized that the failure to appreciate cold as such still persists on the left side one month later; but the patient now declares that it *burns*. The hyperesthesia is less intense, and the sensibility has now returned on both sides as low as Th 6th.

As to etiology, the lesion was thought to be hematomyelia, but no blood was found in the cerebro-spinal fluid, in which it was reported that lymphocytes were abundant. Noguchi reaction negative. Dr. Carr, hearing of the cases of Murrey of Boston, and Victor Horsley of London, believed that a serous meningitis might be present and resolved to operate eight days after admission. He selected the fifth cervical vertebra on

account of a slight asymmetry there, although the X-ray revealed nothing. No abnormality of cord or meninges was found; but about 6 oz. of serous fluid welled out when the bulging dura was incised.

The disordered sensibility was of a syringo-myelic type as regards the right-sided loss to impressions of pain and change of temperature. But on the left side the pain and temperature impulses passed with increased facility and the patient's sensibility was only below the normal as to perception of extreme cold.

As far as this goes it conforms to what Head has described as a loss of protopathic sensibility; but in its completeness this comprises also loss of perception of high temperature and superficial pain as well. Moreover, its impairment is always due to peripheral nerve lesion and never to interruption of afferent impulses within the central nervous system where they are grouped into tracts respectively conveying (1) all forms of touch, (2) sense of attitudes, conscious and unconscious, (3) all forms of pain, (4) in close proximity to the last and contiguous or intermingled all perception of change of temperature. The patient's anomaly does not conform to either the peripheral or spinal type, hence it is worthy of record in order that other observations may furnish comparative data for the solution, for that is at present a problem requiring data.

Dr. Tom A. Williams reported (1) a method of estimating cerebellar dysergia, (2) an anomaly of sensibility in the course of an acute serous meningitis, (3) an apparatus for ready clinical investigation of the sensibility of coolness and warmth.

Dr. Milton K. Meyers reported a case of paralysis agitans with occasional slight tremor; vitiligo was the first symptom that was present.

Dr. William Burdick read a paper on a study of functional exercises in some nervous diseases.

Dr. J. Madison Taylor said that the systematic use of coordinated movements is of the greatest value and that he was glad the subject had been presented before the Neurological Society.

Dr. Burdick said he feared to weary the society by giving the details of his movements. They are Fraenkel's movements modified. It is practically teaching a man to walk again. You get him to walk three inches with support on both sides. The first thing to teach him after teaching how to rise from chair is a side step, because the motion is all in one plane. It is a matter of getting a man to do a small movement and increasing the distance. As soon as you get a man to do a small movement have him do more. Several of the cases have had five years of active work and their ability has increased as the result of increased locomotion.

Dr. Spiller said that the man whose posterior roots had been cut had progressed remarkably in walking under Dr. Burdick's instruction. It is an exceedingly important part of the treatment of these spastic cases after operation. After the posterior roots have been cut and the spasticity has been replaced by a normal degree of tonicity instruction in walking is necessary.

Dr. Taylor said the particular line of exercises Dr. Burdick had suggested led him to say that in connection with a very considerable number of symptoms, and sometimes mere functional disease, systematized exercise is of extreme value. A good many such cases fall into his hands

and he gets results by similar and more elaborate methods most satisfactory to him and the patients and he does not think that matter has been brought to neurological attention as much as it should be. He will feel encouraged to make a presentation of especially efficient methods himself soon.

Dr. Gordon thought there can not be enough emphasis laid on the extraordinary results that we can get from systematic exercise. Each case should be studied individually. He has had cases of poliomyelitis, cases of muscular incoordination from various causes, cases of cerebellar disease with a tendency to walk to one side and cases of foot drop, and when treatment was persisted in a sufficiently long time, even with apparent absence of improvement in the first few weeks, good results were obtained in the end. Dr. Gordon said he has now a man with an affection of the *conus medullaris* and marked muscular atrophy; the patient was first actually carried in the office; at the present time he walks around the house. It took three months before considerable results were obtained. He thought Dr. Burdick's results extremely satisfactory and that they should stimulate us to repeat them.

Dr. Burdick said he did not stop at making the patient walk. If he be a carpenter he works toward the end of making him able to resume carpenter work, if a bar tender to attend bar, if a gardner to push a lawn mower. He tries to make it possible for the man to get back to work. That is the reason he uses functional movements, rather than merely getting them back to locomotion. It makes no difference what the man has to make his living at, our business is to enable him to get back at that. As to the different kinds of cases one very interesting case of diffuse degeneration of the spinal cord was treated in which as long as the patient exercised she seemed to keep the disease from progress, as soon as she stopped she went backwards. That was the experience of Dr. Putnam, of Boston.

Dr. Milton K. Meyers asked if Dr. Burdick had any experience in the form of "falling" exercises in paralysis agitans, originated by Freidlander, in which the various parts of the body are brought to relax to such an extent that they may fall against gravity.

Dr. Burdick said he had had none. He had treated cases of paralysis agitans but the help was only temporary. In these cases particularly one must always have some definite purpose. One man he treated never could turn his hand over, unless he had a definite point to touch. They seem to get some relaxation from their contractures and one improved his manner of walking.

Dr. Samuel Stern read a paper on Kernig's sign, its presence and significance in general paresis of the insane and in what he termed arterio-capillary fibrosis.

NEW YORK NEUROLOGICAL SOCIETY

February 1, 1910

The President, DR. J. RAMSAY HUNT, in the Chair

A CASE OF TETANY

By Dr. Charles G. Taylor

The patient was a girl, ten years old, a native of the United States. Her father was an Austrian; her mother a Russian. About five months