

cortical matter may be attended by intellectual perversion. Charcot has proved very conclusively, by the classical case of Mlle. V., that disseminated sclerosis can exhibit all the symptoms of general paralysis of the insane; that intellectual trouble, even including the delusions of wealth, or as Valentine calls them, the *delire des grandeurs*, may occur in patients of this class.

We find also that in these people there is often a great deal of emotional disturbance. Every one who has seen much of locomotor ataxia will recognise the melancholic attacks, or the great excitability. I have a patient in whom the spinal sclerosis has ascended so high as to greatly affect the origin of the intercostal nerves; and in her transitory attacks of mania are not at all uncommon. She becomes violent, hurls abuse at those around her, and talks only in French; her chosen language at ordinary times being the English. Charcot relates that Mlle. V. was subject to true attacks of lypomania, and had hallucinations of hearing and vision. She had delusions that those about her intended her death by poison. For twenty days she refused food, and it was found necessary to use the feeding tube.

With these things in mind, it is very reasonable to conclude that general paralysis is but the expression of disordered function produced by the same lesion that causes decided nervic trouble and locomotor perversion, when it is seated in the cord. The form of morbid alteration of the brain and its meninges, I think, has very little to do with the formation of any particular variety of insanity; that it is a matter of location rather than of alteration. In any of the lists of morbid appearances we will find all forms of altered structure,—meninges, gray and white substance,—are involved, and we do not find any two forms of insanity which present identical appearances. If you will consult Fox, which is the most complete work I know of, you will see that there is a great deal of confusion and irregularity of information that may be obtained from the examination of the insane brain.

Perhaps the morbid anatomy of general paralysis of the insane is more clearly settled than all the rest. Delaye, Foville, and Pinel (Grand Champs) found induration of the cerebral substance; Fox presents a plate illustrating the miliary sclerosis of general paralytics, and I myself have seen the same changes on isolated spots, varying in size from a small speck to the larger spots of colloid degeneration. That these appearances are the result of primary ischæmic trouble there is not much doubt. Fox is of the opinion that a prolonged spasm of the vessels and subsequent condition of degeneration, are the precursors of actual increase of the connective tissue. In the cord, clinical experience teaches us that conditions of altered vascularity precede sclerosis in every instance, and that marked functional changes are the forerunners of loco-

motor ataxia. In the brain the primary alteration of function, however slight, may be connected with decided interference with the intellectual processes, and sometimes when these patients die before the disease has extended, it will be exceedingly difficult to detect any alterations, either gross or microscopical, while in the cord, if ataxic symptoms have developed themselves in nine-tenths of the cases there will be seen unmistakable traces of induration.

Notwithstanding so many observers consider the lessons in general paralysis to be those of sclerosis, Calmiel, Poincaré, and Bonnet thought they were more often softening, and fatty degeneration; in fact, others take equally opposite views, but the great majority hold to the other doctrine. With the anatomico-pathological facts in mind, it is strange that the two conditions are not more frequently seen together. In my own limited experience I have seen several cases which presented an extension of the symptoms.

Obersteiner, in an excellent paper on Locomotor Ataxia and Mental Disease, considers that mental symptoms are found in the greater proportion of cases of this disease, and calls attention to the fact that these expressions of psychical trouble may be very slight, but still an acute observer will know that there is a departure from the normal intellectual condition. The patient's character is often changed very markedly. I have been often astonished at the apathy of the individual, or, on the other hand, the irritability of temper, the violence of anger, the petulance, which are more transitory evidences—they are as important symptoms, I think, as neuralgic pains, difficulty of co-ordination, etc. These changes were very well displayed in a patient of my own; in health, a most amiable, high-minded army officer; in disease a morbid, bad-tempered, whining wreck. He had been noted for his gallantry on the field during the war; but after this disease had become once established, his character seemed to undergo a complete transformation. He wrangled with every one, became irritable over petty things, and made himself generally disagreeable.

Obersteiner and Simori both agree that these patients should be examined most carefully, and that the prognosis depends much upon the facts relative to mental alterations. The latter says: "It is not enough that the patient keeps himself quiet, and answers the questions relative to his age, how he feels, etc., and does not show marked delusions;" these are not enough to assure us that his intellect is intact.

In regard to the grave secondary mental changes, Tigges considers general paralysis to be a complication, while Obersteiner is convinced the symptoms of this latter disease indicate a progression of the sclerosis upwards. He considers the lesions to be identical, and that it is only the seat