

influenced in its development by the overtraining of the patient in being a *devotee* to rowing and other sports.

2. Degeneration of the nuclei situated beneath the floor of the fourth ventricle. The localization of these pathological changes shuts out the connection of systemic degeneration of the cord, and possibly they were due to the syphilitic infection, and following the degeneration in the basal blood vessels.

3. An extensive disease of the ganglion cells of the cortex cerebri, without any changes worth remarking in the vessels of the cortex, which one must consider as the foundation for the serious psychical disturbance that was manifested. The anatomical examinations gave no apparent interdependence between the before-mentioned pathological changes. The observed changes in the cortex do not agree with those given in other cases of cerebral paralysis. The author does not attempt to give the *raison d'être* of the changes in the internal organs, as the liver and spleen; but the histological changes were minutely and critically worked over. The changes in the ganglion cells, the nerve trunks and muscle fibres are elucidated by carefully prepared plates.

CONCERNING THE PATHOLOGICAL ANATOMY OF CHOREA.

Dr. Kroemer (Archiv. f. Psych. u. Nervenkrank., vol. xxiii, pp. 538-557). After first giving a thorough historical retrospect of the different opinions and theories which have been held concerning the anatomical changes necessary to the production of chorea, the author recites a case which came under his observation in the latter part of her illness and on whom an autopsy was made.

The patient was a thirty-five year old female who had presented no inherited or acquired neuropathic manifestations until her twenty-fourth year, when she remarked a disposition of the head to move involuntarily from one side to the other. Gradually the hands and feet became affected, so that she was almost unable to continue her work as a house-maid. After four years the movements becoming much worse, she was removed to a charity, where she remained six years, and during this period the contractions were so great as to throw her forcibly backward and forward; she was unable to walk alone and generally helpless. It was in her thirty-fourth year that mental aberration was first noticed. Formerly a quiet and ordinary young woman, she mani-

fested great sexual inclinations, continuous masturbation, thought she was pestered by a man, etc.; she became childish, silly, tore her clothing, destroyed the furniture, went into the streets unclad, and other accompaniments of acute mania. She was unable to remain for a moment in the same position, or to take regular steps in walking. The hands and feet were ever in movement, the former pronated, then supinated, the fingers quickly flexed and extended; she was thrown in jactitation first to the right, then to the left; slept poorly; spasms in the glutei muscles kept the patient from sitting; the head continued going forward and backward, then from side to side, the muscles of expression contracting continually so that her countenance was never quiet. No satisfactory results could be obtained; sensibility and reflexes; but the former was thought to be considerably delayed. The patient masturbated continually and lawlessly, and continually importuned every man who approached her. About a year after entering the asylum she fell from a window, but no injuries followed, except superficial skin wound. The patient continued to fail, the pulse becoming small and rapid, the temperature slightly elevated; respirations frequently of Cheyne-Stokes character, and chronic spasms continuing meanwhile, most of the muscles of the body now being implicated. Later on symptoms of pulmonary inflammation; was quickly followed by death.

The anatomical changes after death were found to be over the right hemisphere, a hæmatoma 5 ctm. in diameter, and over the entire left hemisphere one great hæmatoma. These sacs were so distended that the fluid spurted out in a stream when an incision was made into it, and the convolutions presented an outward concave appearance. The walls of the sac were roughened and appeared of old-standing, while the blood contained therein was fresh and evidently resulted in the last few days of life. In the cerebral ganglia and internal capsule were found a great number of little bodies, varying in size from so small as to be scarcely perceptible with the microscope, to one 6 mm. in diameter. These were greater on the left side. In connection with these disturbances and defects there was an atrophy of the left pyramidal tract of the medulla, and of the entire right half of the cord. That is, there was here found about all the pathological changes that have been found in patients dying with chorea—such as the inflammation of the cerebral meninges, with evidences of both old and new inflammation, the changes in the corpus striatum and the optic thalamus,

and a direct participation of the pyramidal tract in the medulla and the spinal cord.

The author thinks it was left to Kahler and Pick to first explain the relation of the many different anatomical changes found as accounting for chorea, and this explanation is that the pathological product lays within the range of the pyramidal tract, or at least in such relationship that it can make its presence felt. This disease process can, therefore, have its seat in any part of the course of the pyramidal road, from brain to cord, and the nutritional changes are not necessarily in various or all portions of this path, one single spot being sufficient. The process may be of various kinds, from a single hyperæmia to the most irreparable change, and in this way is to be explained the complex etiology of the disease. For instance, such a condition may result from embolism, the result of a rheumatic endocarditis with dendritic vegetations. In this way it may result from ordinary apoplexy, or from the hyaline bodies of Jakomenko, and lately described by Wallenberg, or even indeed the as yet unknown germ of Straton and Laufenaer, not to speak of the various nutritional changes that have been described by others.

ON THE CEREBRAL CENTRE FOR MOVEMENT OF THE VAGINA IN ANIMALS.

Bechterew and M. Slawski (Russian Medicinskoje Obesrenje, No. 15, 1891. Ref. in Neurog. Centralb., No. 1, 1892). Former investigation concerning the motor innervation of the vagina, as from Kehrer, Langley and Justrebow has left the question of a higher nerve centre in an unsettled condition, and with the idea of supplying this knowledge the authors have made some experiments on rabbits and sluts. A distended bladder was put in the vagina, and this communicated with a water manometer by means of a glass tube which came in contact with a rotating cylinder by means of Marry's writing apparatus; and in this way movements of the vagina in response to stimulation of areas of the brain were very distinctly apparent. The important points in their experiments are as follows: The cortex of the cerebrum contains centres of two kinds for the innervation of the vagina—one for the excitation of movement, the other for checking it. In rabbits they both lie in the anterior part of the motor area; in bitches they are in the sigmoid gyrus. These centres are not clearly separated topographically, and are very closely situated. In