

which are completely paralyzed are not contracted, and their passive mobility is exaggerated; the antagonizing muscles of these groups, however, which have preserved their voluntary movement relatively well, are contracted. Mann suggests that possibly the excitomotor fibers of each muscular group are closely associated, or identical, with the inhibitory fibers of its antagonizing group. In the lower extremity in hemiplegic cases the contracture exists in those muscles which extend the limb, which "lengthen" it, and in these muscles power is relatively well preserved. In the upper limb the extensors are paralyzed and the flexors are movable voluntarily to a certain degree. The hemiplegic contracture is not the same as the contracture from peripheral cause. The hemiplegic contracture is due, not only to the innervation of the relatively well preserved antagonizing muscles, but also to the destruction of the inhibitory fibers to these same antagonizing muscles. Hering and Sherrington found that inhibition—recognized by flaccidity of a previously contracted muscle—could always be obtained by feeble irritation of that part of the cortex from which stronger irritation caused contraction of the antagonizing muscles; for example, when feeble irritation of the cortex caused relaxation of the biceps, stronger irritation of the same part caused contraction of the triceps with relaxation of the biceps. Hering and Mann say that the contraction of a muscle is usually associated with relaxation of its antagonist, contrary to the view of Duchenne, who held that in every contraction of a muscle a simultaneous contraction of its antagonist occurs, enabling the latter to act as a moderator in the movement. It is true that when a limb is held firmly in a certain position the antagonists are also contracted.

When one of two groups of muscles which act together is paralyzed peripherally, the other group is thrown into excessive action by voluntary attempts to innervate the paralyzed group; thus, when the extensor digitorum communis is paralyzed, attempts to extend the fingers have been found to cause flexion at the wrist joint; or when the interossei and flexors of the fingers are paralyzed, attempts to innervate these paralyzed muscles have caused extension at the wrist joint. In these cases the antagonizing muscles are not innervated in attempts to control the paralyzed muscles; for example, the fingers are not extended by efforts to flex the fingers when the flexors are paralyzed, which would be the case if Duchenne's views regarding the simultaneous innervation of opposing groups of muscles on voluntary movement were correct.

The simultaneous innervation of associated groups of muscles is probably of cortical origin.

When a limb is cut off entirely from its cortical centers, as seen in transverse lesions of the cord, the paralysis is flaccid. In rare cases of hemiplegia the arm is completely paralyzed; in these cases the flaccidity is complete. Secondary rigidity in hemiplegia develops simultaneously with the restoration of a certain amount of power in the paralyzed limbs. In rare cases of hemiplegia the muscles which have retained a certain amount of movement do not exhibit hypertonia; in such cases possibly the spinal cells or centripetal tracts are affected.

SPILLER.

98. A FORM OF NEURALGIA OCCURRING IN CYCLISTS. W. H. BROWN (Brit. Med. Jour., February 26, 1898).

The author describes a condition of extreme pain and tenderness of the perineum, scrotum, testicles and sometimes of the penis and inner surface of the thighs, that occurs after prolonged, and especially

after very rapid, bicycle-riding. At times there is anesthesia of the parts instead of hyperesthesia. An entirely analogous trouble has been observed in women. The affection may be sufficiently severe to confine the patient to his bed for a month, but the term "neuralgia" would seem to be a misnomer for such cases, as there may be visible signs of bruising, with extravasations of blood. The treatment is at first absolute rest and later the adoption of a suitable saddle and moderation in the use of the wheel.

PATRICK.

99. NOUVEAUX FAITS RELATIF A L'ÉTUDE DES NEVRITES PERIPHERIQUES DANS LEUR RAPPORTS AVEC LE RHEUMATISME CHRONIQUE DEFORMANT (New Facts Relative to the Study of Peripheral Neuritis in its Relation to Chronic Rheumatism). Pitres et Carriere (Archives Cliniques de Bordeaux, No. 8, 1898, p. 405).

After considering the relations between chronic rheumatism and affections of the nervous system, and reviewing the results of examination of the cord and nerves in this disease, as reported by different observers, the authors proceed to give the clinical histories and the results of post-mortem examination in two very typical cases of chronic rheumatism, with much deformity.

CASE 1. Woman of forty years. Family history, negative. Personal history, negative, except that her work as a servant caused her to be a good deal exposed to cold and dampness.

The joint affection began in the left foot, and gradually proceeded until all the joints of the limbs except the hips, and even the jaws were affected. There was no sensory disturbance, except slight hypesthesia over the affected articulations. Such reflexes as were independent of the joint ankylosis were normal. There were no vasomotor disturbances. The skin and nails showed some trophic changes, and there was extensive muscular atrophy. In the apices of the lungs there were the physical signs of tuberculosis.

The patient dying, the autopsy revealed advanced tuberculosis of the lungs.

The affected joints showed thickening of the connective tissue, increase in size of the ends of the bones, eburnation and destruction of the cartilages in places, and development of vegetations on the synovial membranes. Pieces of nerves from different regions were hardened in 1 per cent. osmic acid solution and double stained with borax carmine. The cord was hardened in Müller's fluid. The anterior and posterior spinal nerve roots were normal. The large nerves of the arm showed an increase of fine, badly staining fibers, and, in places, segmentation of the myeline, and nuclear proliferation, more marked towards the periphery, the changes being found in their greatest intensity in the filaments supplying the fingers.

The sciatics on both sides were normal, but their branches supplying the knee-joints showed similar changes to those found in the nerves to the fingers. The lesions were those of parenchymatous and interstitial neuritis.

*The cord was normal.*

CASE 2. Woman of fifty-seven years. Family history, mother and grandmother rheumatic. Previous personal history negative.

The disease began in the small joints of the fingers.

The phalango-phalangeal and metacarpo-phalangeal articulations were all affected, the hands being much deformed, and being maintained in the position of flexion. There was great atrophy of the small muscles of the hand, especially of the interossei. The carpo-