more or less of the gray substance; while in others, much rarer cases, it extends backwards, involving the posterior columns. Descending degeneration and disseminated sclerosis are often present, as may be seen in the specimens. The symptoms of this disease are found only in the adult, and their distribution is symmetrical. The upper extremities are first attacked and suffer chiefly, owing to the greater development of the lesion in the cervical region which occurs in all cases. Sensory or motor disturbances may form the first indication of the disease. A slight wasting of the thenar and hypothenar eminences is often found early, but a change in the sensibility of the skin of the fingers perhaps more frequently attracts the attention of the patient. This sensory disturbance is peculiar in the fact that while the sensation of pain or of heat and cold is entirely lost, that of touch remains perfectly normal. This was well shown in one of Charcot's cases. The patient, a programme seller in one of the Parisian theatres, was a great cigarette smoker. He consulted Dr. Charcot on account of a burn which he unconsciously received while holding a lighted cigarette in his fingers. He was able to recognize perfectly well the position of the cigarette in his hand, but was wholly unaware that it was burning him. This disturbance of sensibility, beginning in the fingers, spreads gradually upwards, involving the entire surfaces of both arms, and sometimes also of part of the trunk. The wasting of the muscles and the motor paresis are quite similar to the corresponding changes seen in the ordinary form of progressive muscular atrophy. Scoliosis accompanies the disease in nearly all cases. A spastic rigidity of the legs is often present, being due to the secondary degeneration in the lateral columns. Atrophy of the muscles of the legs and the peculiar sensory disturbances, as seen in the upper extremities, is very rare, and only comes on late in the disease, when the affection has extended downwards to the lumbar region. Vasomotor and trophic disturbances are common. Differences in the size of the pupils are frequent, from the implication of the sympathetic in the cervical region, and the disseminated sclerosis would account for the nystagmus which is often present. The cause of the motor symptoms of this disease is not difficult to explain from the implications of the large ganglion cells of the anterior horns. When examined with a microscope, some of these cells present a granular degeneration which entirely obscures the nucleus, while others are quite atrophied in their appearance. Since each motor fibre, from its origin in a large ganglion cell of the anterior horn to its termination in the muscle, is simply a prolonged and uninterrupted process of this cell, it is easy to understand that any irritation of the cell itself must cause a degenerative change in this process; and, further, that this change must first begin in that portion farthest removed from the nucleus which nourishes it, consequently, in its most peripheral part, or where the motor fibre joins the muscle.

The sensory symptoms are much less easily explained, owing to the discrepancies which exist in the statements of the various experimenters in regard to the functions of the different tracts of the cord. That the fibres for the conduction of pain and temperature run in different tracts from those which conduct ordinary tactile impressions receives much support from clinical phenomena. According to Brown-Séquard, the central part of the gray matter serves for the conduction of the sense of temperature, its posterior and lateral parts for that of pain, while the anterior columns of the cord convey tactile sensibility, all three forms previously decussating in the median line. Schiff states that the gray matter serves for the conduction of pain, but that tactile impressions are conveyed by the posterior columns. Dr. Gowers, as the result of his long and excellent experience, says that after their decussations in the posterior commissure, the fibres subserving sensibility to pain pass upwards in the antero-lateral ascending tract, and that those subserving temperature probably pass up in their immediate vicinity. With this assertion Ferrier does not agree, for he found on dividing the outer half of the lateral column in the spinal cord of monkey that there was no impairment of painful sensibility the day following the lesion. On the other hand, Gowers quotes a case of injury to the spinal cord in the upper cervical region of a man which involved the lateral column and gray matter, as the result of which there was an entire loss of sensibility to pain on the side of the body opposite to the lesion, with-