

as complete as in locomotor ataxia, which often leads to a confounding of the two diseases. A sclerosis of the posterior columns of the cord, as is seen in talus, has the same effect, this reflex arc being interrupted at this point. An anterior polio myelitis by the destruction of the anterior ganglion cells also destroys the reflex arc with loss of knee-jerk as the result, and the same may be said of any lesion of the motor efferent nerve. In regard to the excess of knee-jerk we find it in all diseases in which there is an interruption of the pyramidal tract anywhere between the cortex of the brain and the anterior horn of the spinal cord. A common cause is a hæmorrhage into the internal capsule causing a destruction of the fibres as they pass through this portion of the brain. As a consequence the inhibitory influence is cut off from this hemisphere, and an increased knee-jerk is developed on the opposite side of the body. In certain cases of hæmorrhage into one internal capsule, however, the knee-jerks on both sides after a considerable time may be increased, and the cause of this increase on the sound side has been much debated. Professor Déjerine told me he considered it to be due to the uncrossed fibres in the column of Turk being degenerated. This explanation is to me improbable from the fact that the column of Turk usually ends about the mid-dorsal region, and as the centre of the knee jerk is in the lumbar region, it is consequently much below the termination of this tract. A more probable explanation to my mind lies in the fact that the legs, in conjunction with other parts of the body, which are much associated in their action, are innervated more or less from both hemispheres, and that it is a degeneration of these fibres, the tract of which is still unknown, which causes an excess of knee-jerk on the same side as the lesion in the brain. Excess of knee-jerk also follows multiple sclerosis when an islet implicates the pyramidal tract. Another cause of increased knee-jerk is to be found in a tumor of the middle lobe of the cerebellum where it may be excessive. I have said nothing of myelitis since its effect on the knee-jerk varies with its position. If we suppose a transverse myelitis in the mid-dorsal region of the cord, then an increased knee-jerk results from the interruption of the pyramidal tracts. If, however, the myelitis descends to the lumbar region, then we find an entire absence of the knee-jerk owing to the destruction of the reflex centre. In conclusion, I may say that I have only mentioned a few of the more common diseases in order to demonstrate more fully some of the changes in the knee-jerk which are met with in every-day practice.