In this series of experiments no attempt was made to produce exact lesions but injuries were effected in the subthalamic and peduncular regions of numerous animals and the results were compared.

The animals used were new-born kittens. In these very young animals little or no glial reaction occurred but cysts formed at the site of the injury and the tracts which degenerated in consequence of the lesion simply disappeared. Through a rectangular incision in the posterior parietal region a scalpel was passed ventral-wards till it reached bone and then turned through a right angle.

The symptoms that followed this manoeuvre were always the same; with a left-sided injury, turning of the head to the right, choreiform movements which lasted about a week, and later stiffness, noticeable especially when the animals walked. In two animals blindness occurred on the left side. The animals lived about three months and it was seen that in comparison with controls they were deficient in growth.

Examination of the brains showed that in all cases the regio hypothalamica and the substantia nigra were severely injured and in most cases the injury extended beyond these parts. The resulting degeneration involved:

(a) the pyramids;
(b) the corticopontine system;
(c) the lemniscus medialis;
(d) the stratum intermedium of the substantia nigra;
(e) the brachium conjunctivum of the opposite side.

The hypothalamic commissure was intact and the posterior commissure almost so.

The atrophy of the corticopontine system apparently spread beyond the pons to the cerebellum and in consequence the stratum complexum of the latter was almost entirely absent and the stratum superficiale had suffered badly, only the stratum profundum being relatively intact.

The degeneration of the lemniscus extended even to the arcuate fibres coming from the posterior column nuclei of the opposite side. In the pons some fibres could be traced to the red nucleus and seemed to come from Forel's decussation.
The degeneration of the stratum intermedium of the substantia nigra seems to indicate that it derives from structures situated above. A small bundle of fibres lying dorsolaterally in the substantia nigra was intact and could be traced into the fillet.

The superior cerebellar peduncle of the non-operated (right) side of the brain was always a little smaller than that of the left, although the red nucleus was intact; the corticothalamocerebellar system must therefore be of considerable size in the cat.

The rotation of the head to the right is regarded as a reflex consequence of the loss of proprioceptive stimuli resulting from the destruction of the lemniscus.

The choreiform movements were manifest even in animals in which the red nucleus was undamaged. As regards the rigidity which appeared after some days, it is emphasised that the red nucleus has not the influence in its production which it has been considered to have.

NEUROPATHOLOGY.


In this paper clinical and short pathological descriptions are given of seven cases, all presenting some disturbance of tone or movement, but, apart from that, so diverse that they do not form any homogeneous group. Cases 1, 2 and 3 were cases of generalised rigidity in elderly arteriosclerotic subjects, and inflammatory as well as simple degenerative changes were found in the brains. Case 4 was clinically similar to paralysis agitans, the subject being a woman 72 years of age: the pathological changes preponderated in the substantia nigra. Case 5 is the most interesting; it was one of choreiform movements involving the left arm (especially the hand) and face, and occasionally affecting the left leg, in a man of 75. In the brain an old haemorrhage was found in the head of the right caudate nucleus and the adjacent part of the putamen. This sharply localised lesion was evidently responsible for the choreiform movements which the patient exhibited. Its position seems to lend some support to the view that different parts of the caudate nucleus are associated with the control of movement in corresponding parts of the body.

The seventh case was one of Little's disease and the pathological changes found were primarily cortical.


A description of the pathological changes in two cases of Friedrich's ataxia. The patients were full-blooded negro brothers; the elder died three year