

culliculi call forth any falling tendency whatsoever in an animal subjected to such treatment.

The cortical area (suprasylvian and ectosylvian gyri) that supplies the greatest electrical response to rotatory or post-rotatory stimulation was removed without precipitating any symptoms of imbalance phenomena.

The afferent and efferent pathways associated with the colliculi are discussed.

Marchi's staining method was applied on some of the cats that had their inferior colliculi removed. It revealed a degenerated path from the inferior colliculus to the temporal lobe. It cannot be said, however, that this degeneration affected the auditory pathway, the vestibular pathway, or both, but the balance abnormalities that were present suggest that the vestibular pathway was involved.

GRANIT, RAGNAR, and C. JOB (Nobel Institute for Neurophysiology, Stockholm, Sweden). Excitability of motoneurons measured by electromyographic and monosynaptic testing.

In order to compare results obtained by electromyography with those obtained by monosynaptic testing of the excitability of the motoneurons for the gastrocnemius-soleus system of decerebrate cats part of the ventral root L_7 or S_1 was severed for monosynaptic recording. Otherwise the efferent roots were intact. The test shock for the monosynaptic response was placed on either or both gastrocnemius nerves. The two hind legs were denervated except for these nerves. Silver pins were stuck into the muscle for electric recording. The excitability was varied by stretching the muscle at different initial tensions. Comparisons were made between the facilitation curves obtained by monosynaptic testing and the actual discharges occurring in the muscles as well as in the part of the ventral root used for recording. Afterwards one gastrocnemius nerve was severed and used for monosynaptic testing so as to have

a testing system less influenced by refractoriness and subnormality of periphery and centre. Facilitation was expressed in multiples of the control in monosynaptic testing. It was clear that a discharge test, such as the one provided by electromyography, indicated reflex activity which did not necessarily run parallel with the amount of facilitation measured in multiples of a control, further, that monosynaptic testing with the aid of the severed nerve of the synergist did not indicate silent periods (depressions and inhibitions) which appeared in the records from the muscle.

GRANIT, RAGNAR, and GUNNAR STRÖM (Nobel Institute for Neurophysiology, Stockholm, Sweden). Stretch reflexes before and after de-efferentation.

In decerebrate cats in which the hind limbs had been denervated except for the gastrocnemius nerves, the facilitation of the gastrocnemius monosynaptic response was measured during slow stretch of the gastrocnemius-soleus muscle. The test was applied on to the one gastrocnemius nerve, severed below the electrodes, the stretch impulses arriving to the centre through the other unsevered nerve. The monosynaptic response was led off from a small severed part of the S_1 or L_7 ventral root. These as well as other roots were left intact to begin with. The experiment was then repeated with L_9 , L_7 and S_1 ventral roots severed. In this preparation the effect of stretch could thus be tested before and after de-efferentation. It was found that the early facilitation was greater with the roots intact, provided that the initial tension of the muscle was low. High tension tended to make differences before and after de-efferentation than before. The early excess facilitation was seen before the stretch impulses themselves had had time to activate the muscle suggesting that, in decerebrate animals, tonic reflexes may involve the muscle end organs in addition to the muscle fibres themselves.