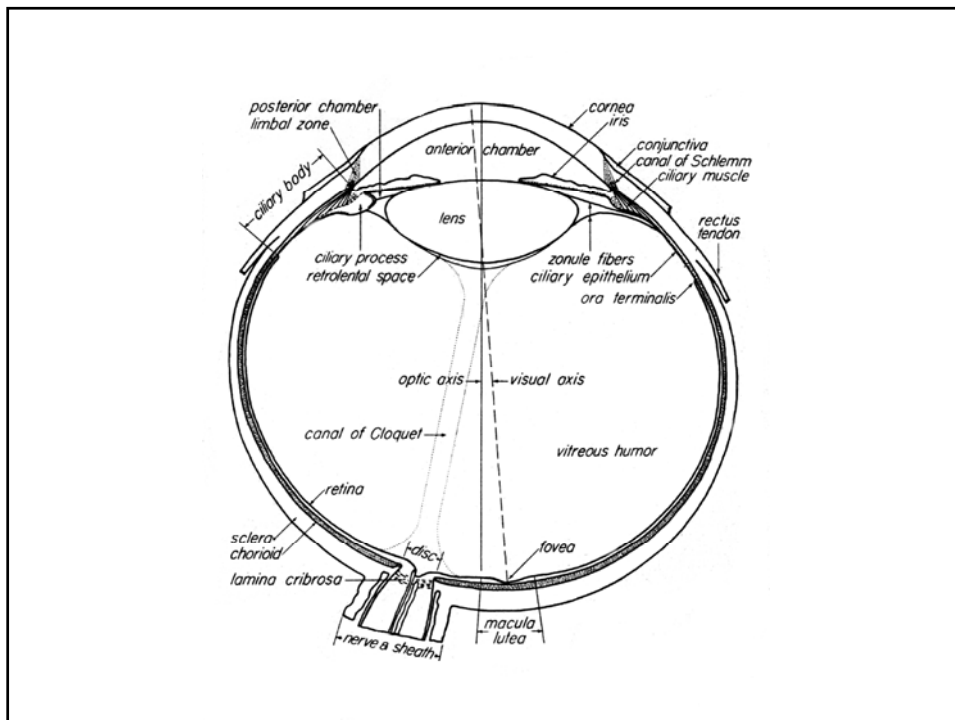
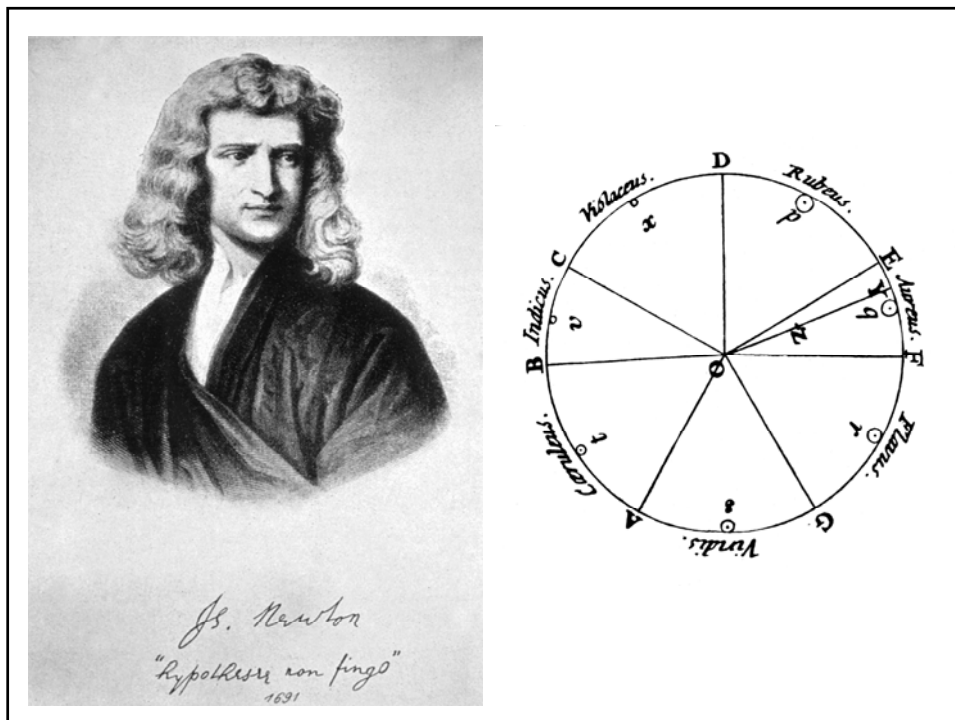
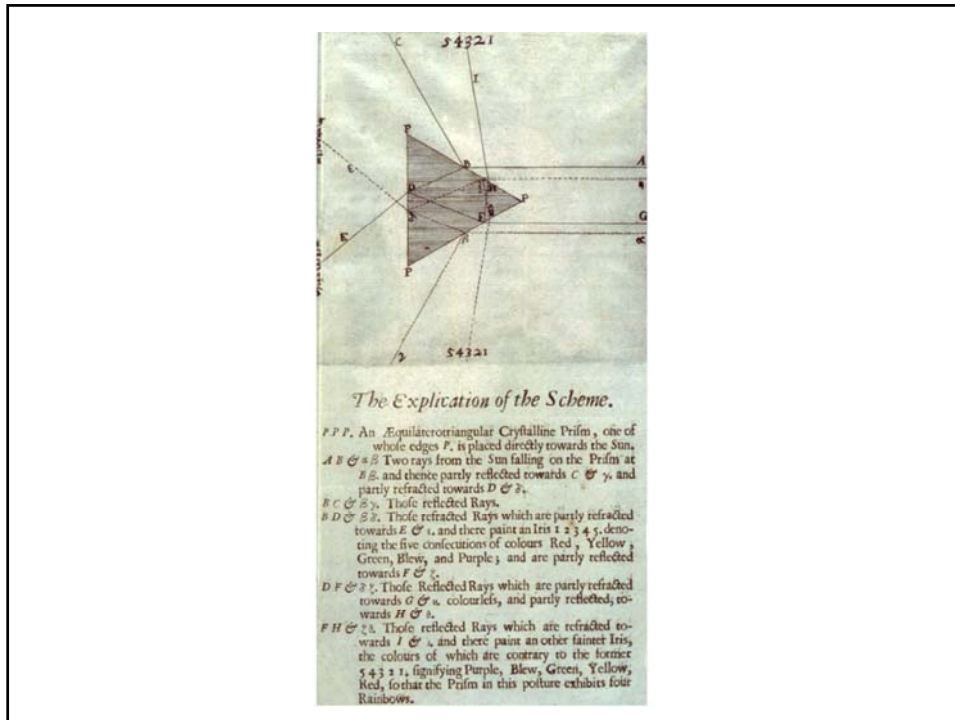


Vision: Introductory Lecture 2017

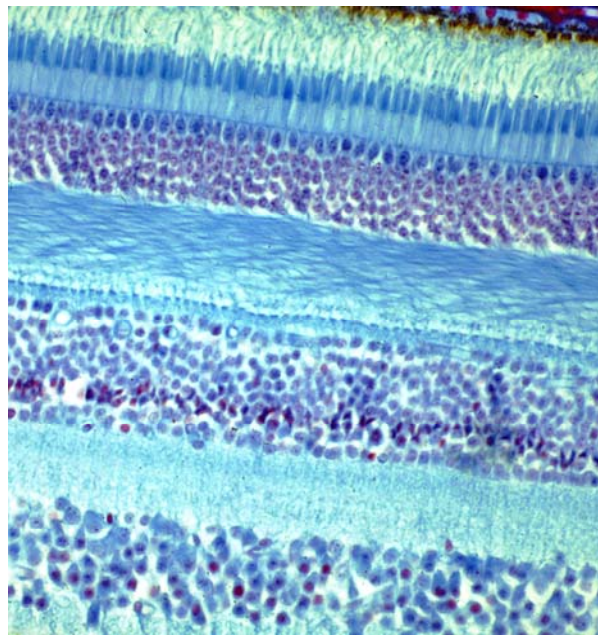
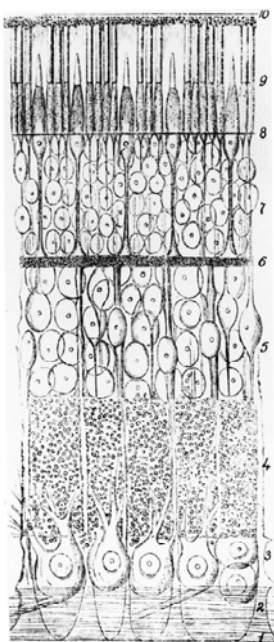
Prof Mitch Glickstein

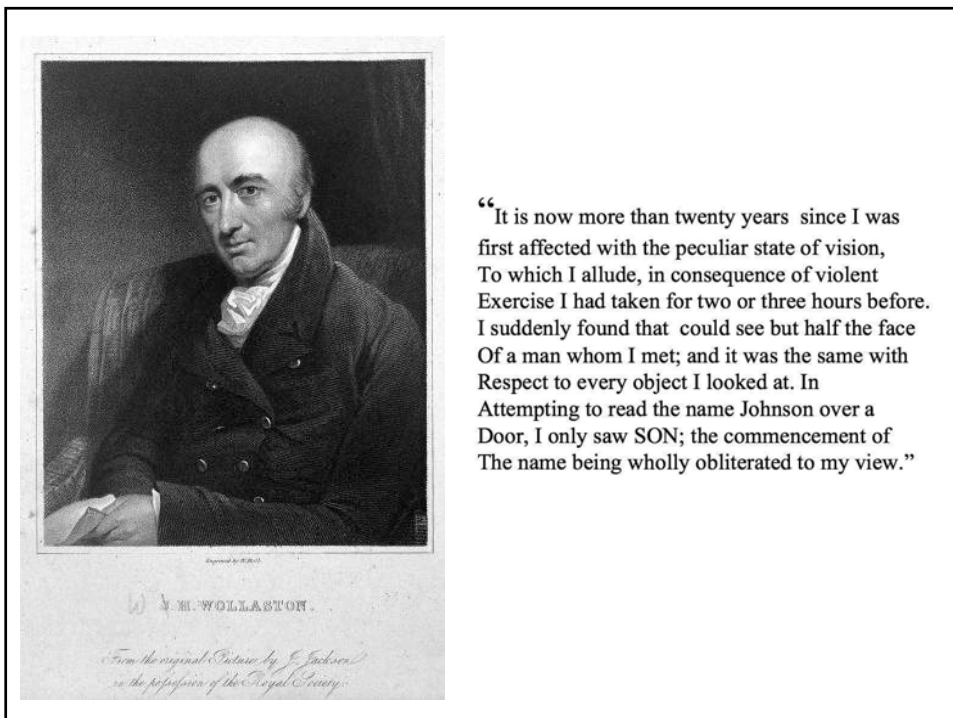
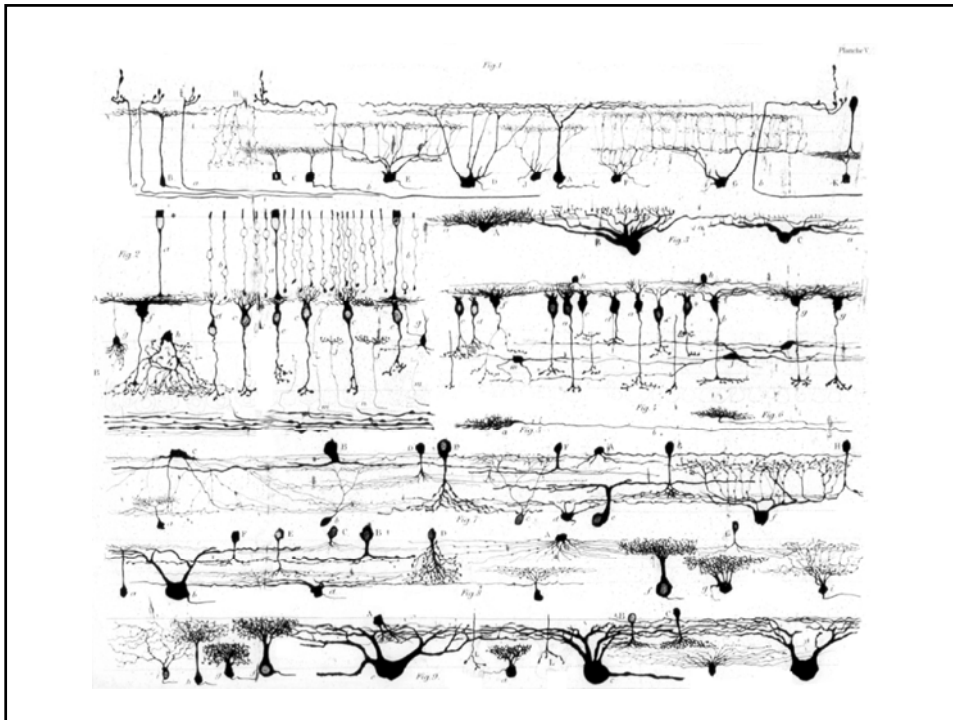




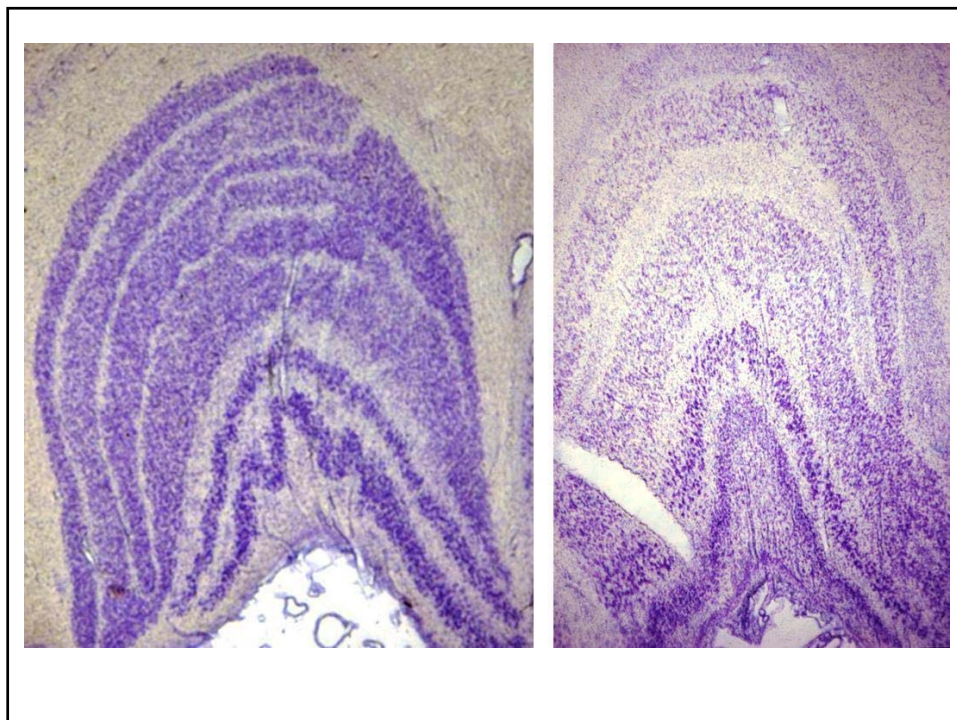
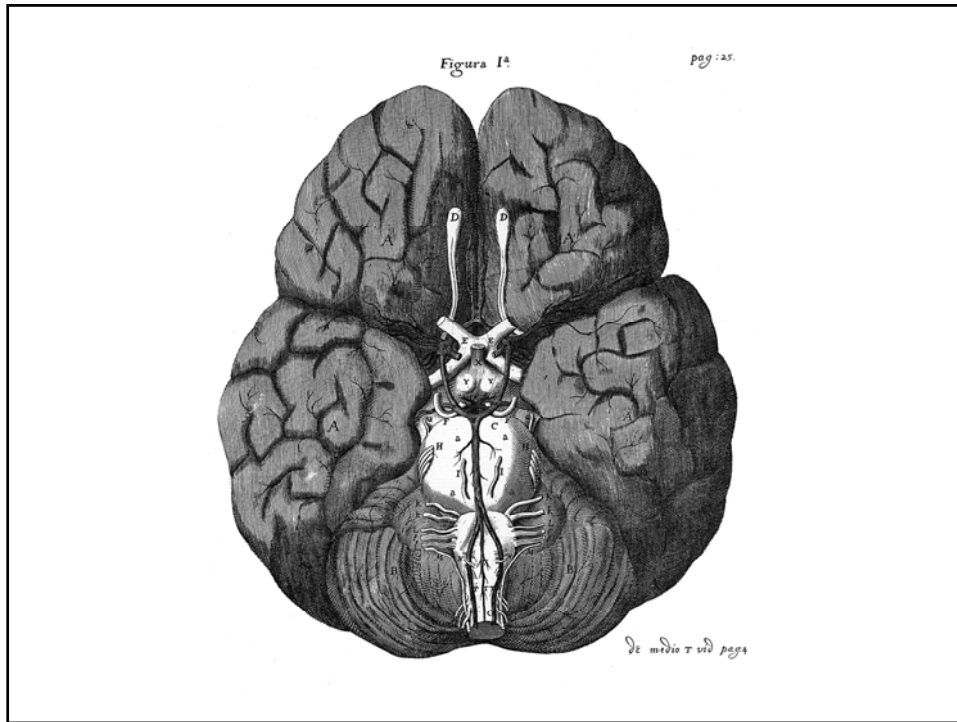


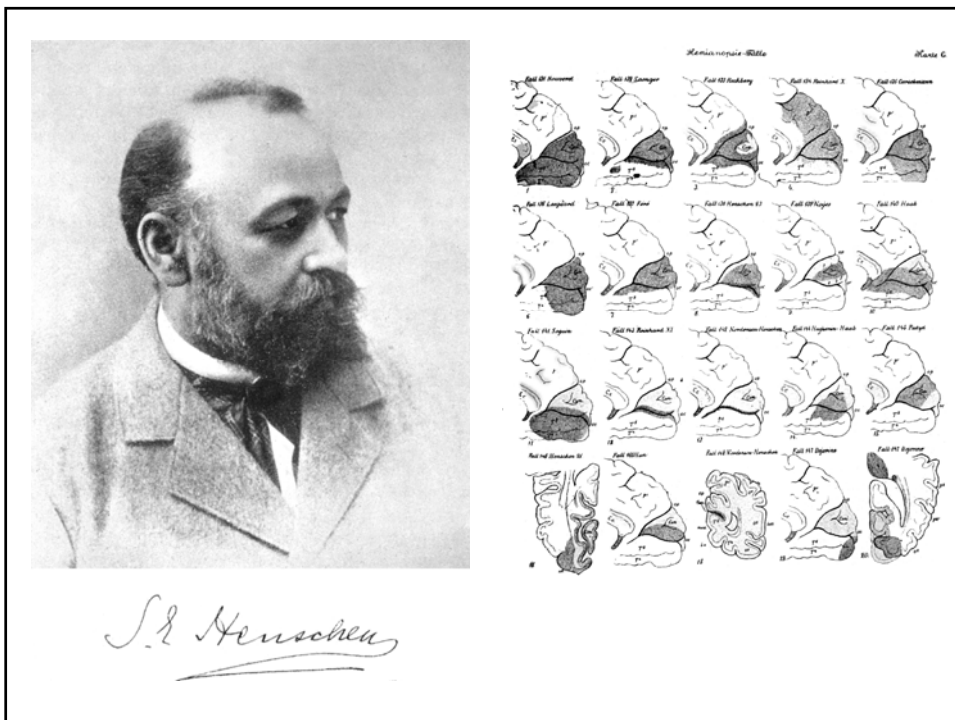
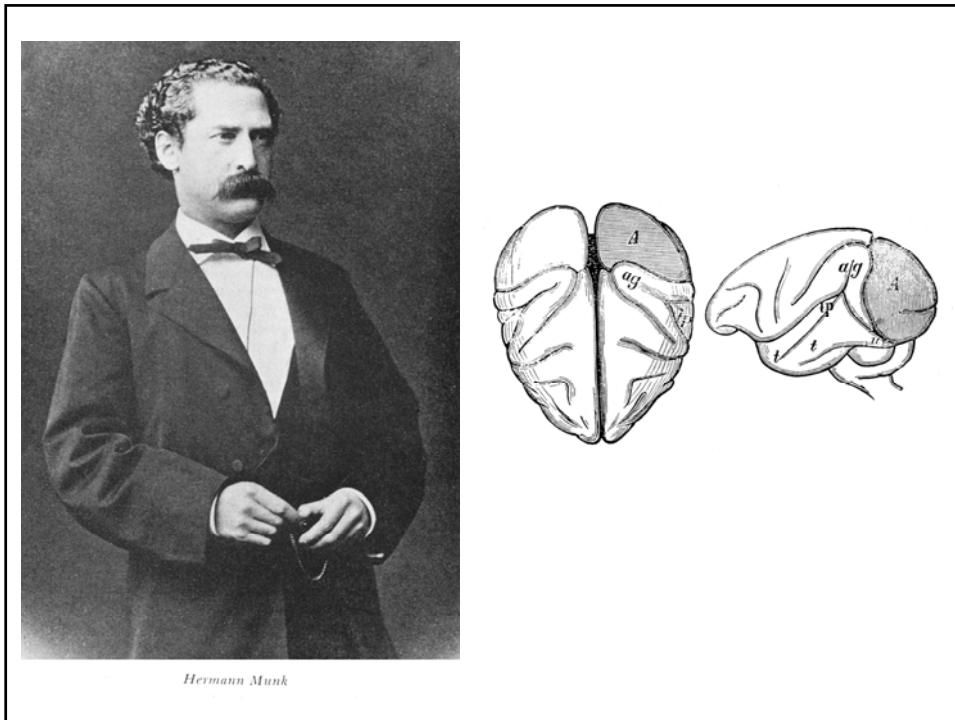
“It becomes necessary to suppose the number limited, for instance to three principal colours....”

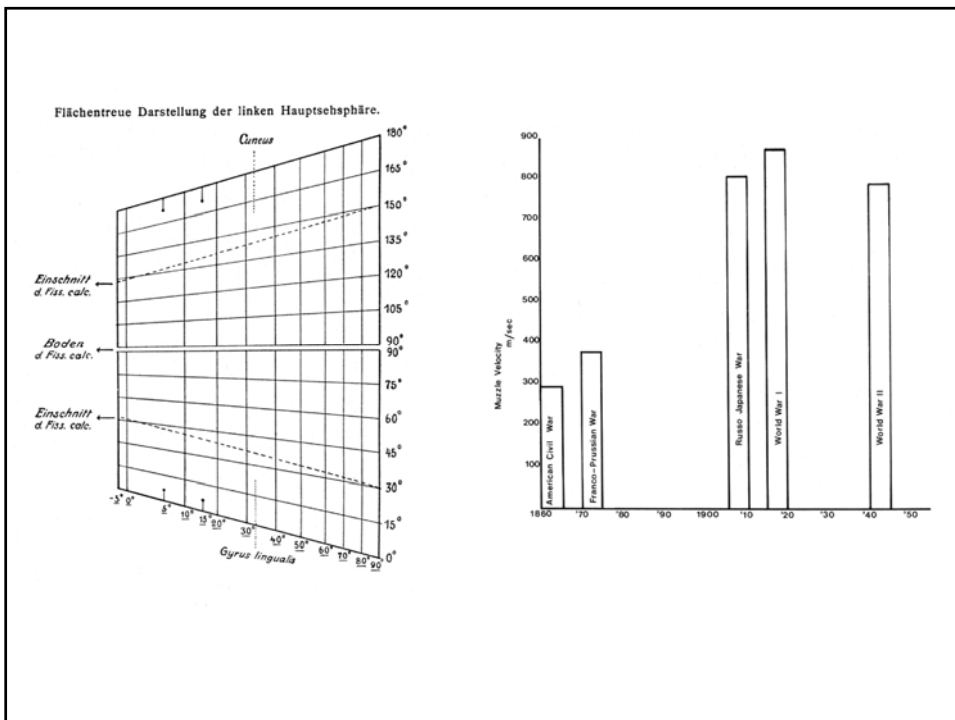


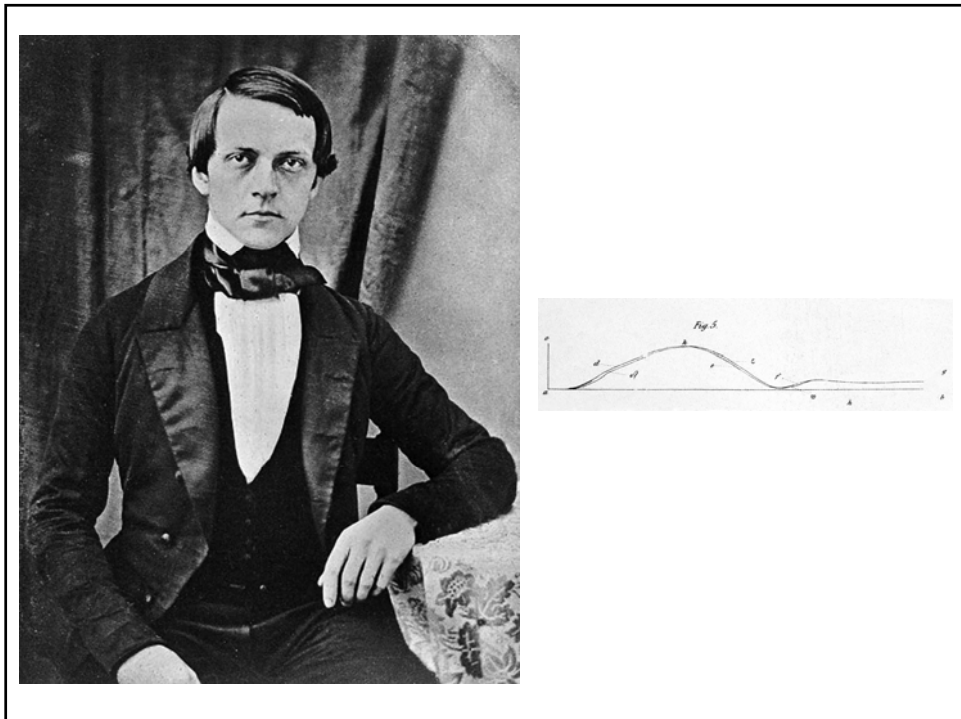


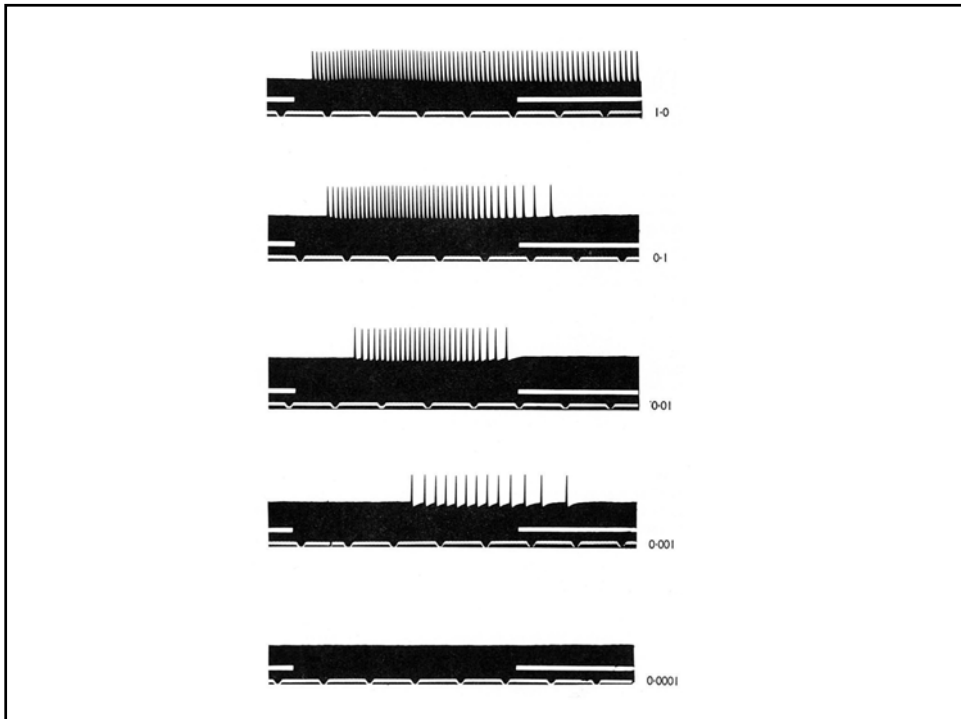
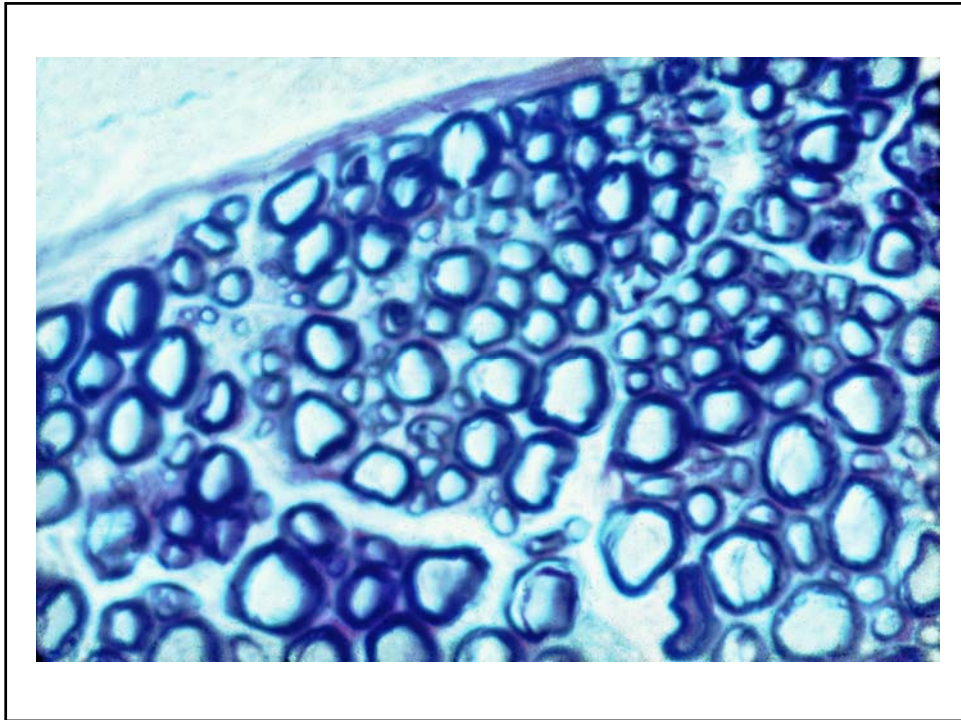
“It is now more than twenty years since I was first affected with the peculiar state of vision, To which I allude, in consequence of violent Exercise I had taken for two or three hours before. I suddenly found that I could see but half the face Of a man whom I met; and it was the same with Respect to every object I looked at. In Attempting to read the name Johnson over a Door, I only saw SON; the commencement of The name being wholly obliterated to my view.”

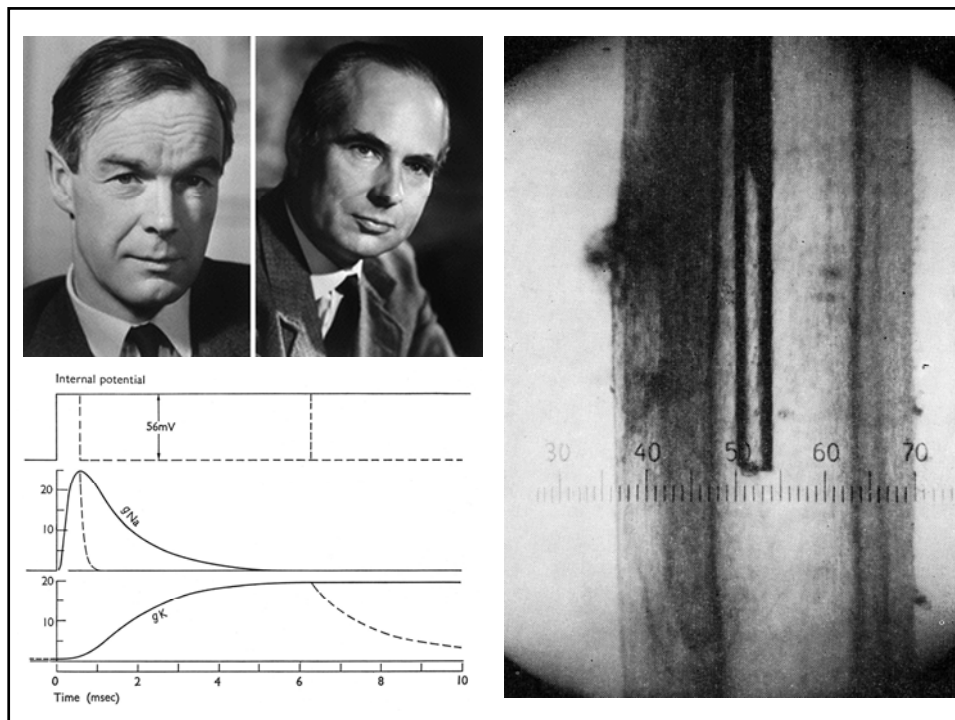












PROCEEDINGS

OF THE

PHYSIOLOGICAL SOCIETY,

May 21, 1904.

On the action of adrenalin. By T. R. ELLIOTT.
(Preliminary communication.)

In further illustration of Langley's generalisation that the effect of adrenalin upon plain muscle is the same as the effect of exciting the sympathetic nerves supplying that particular tissue, it is found that the urethra of the cat is constricted alike by excitation of the hypogastric nerves and by the injection of adrenalin. The sacral visceral nerves, on the other hand, relax the urethra of the cat. But while the hypogastric nerves relax the tension of the bladder wall in the cat, they do not cause any similar change in the dog, monkey, or rabbit: and though, as is well known, adrenalin inhibits the cat's bladder, this reaction is the exception in the mammalian bladder, for adrenalin does not produce any change in those of the three animals named above.

I have repeated the experiment of clean excision of the suprarenal glands and find that the animal, when moribund, exhibits symptoms that are referable to a hindrance of the activities of those tissues especially that are innervated by the sympathetic. They lose their tone; and may even fail to respond to electrical stimulation of the sympathetic nerves. The blood-pressure falls progressively, and the heart-beat is greatly weakened. And at the latest stage previous to death, though the nerves of external sensation and those controlling the skeletal muscles are perfectly efficient, the sympathetic nerves exhibit a partial paralysis of such a nature that nicotine, when injected, is unable to effect through them a rise of blood-pressure or to cause dilatation of the pupil.

¹ Lewandowsky. *Centralblatt f. Physiol.* p. 433. 1900.

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This marked functional relationship of the suprarenals to the sympathetic nervous system harmonises with the morphological evidence that their medulla and the sympathetic ganglia have a common parentage¹. And the facts suggest that the sympathetic axons cannot excite the peripheral tissue except in the presence, and perhaps through the agency, of the adrenalin or its immediate precursor secreted by the sympathetic paraganglia.

Adrenalin does not excite sympathetic ganglia when applied to them directly, as does nicotine. Its effective action is localised at the periphery. The existence upon plain muscle of a peripheral nervous network, that degenerates only after section of both the constrictor and inhibitory nerves entering it, and not after section of either alone, has been described². I find that even after such complete denervation, whether of three days' or ten months' duration, the plain muscle of the dilator pupillae will respond to adrenalin, and that with greater rapidity and longer persistence than does the iris whose nervous relations are uninjured³.

Therefore it cannot be that adrenalin excites any structure derived from, and dependent for its persistence on, the peripheral neurone. But since adrenalin does not evoke any reaction from muscle that has at no time of its life been innervated by the sympathetic, the point at which the stimulus of the chemical excitant is received, and transformed into what may cause the change of tension of the muscle fibre, is perhaps a mechanism developed out of the muscle cell in response to its union with the synapsing sympathetic fibre, the function of which is to receive and transform the nervous impulse. Adrenalin might then be the chemical stimulant liberated on each occasion when the impulse arrives at the periphery.

The removal of the stellate ganglia. By H. K. ANDERSON, M.D.
(Preliminary communication.)

The stellate ganglia have been removed in cats and kittens. To remove them the scapula is drawn downwards and outwards and the lat

¹ Eohn. *Arch. Mikr. Anat.* xxxi. 1903.

² Fletcher. *Proc. Physiol. Soc. This Journal*, xxxi. 1898.

³ Cf. S. J. Melitzer and Clara Melitzer Auer, who obtained a like result after excising the superior cervical ganglion alone. *Ann. Journ. Physiol.* xi. 1904.

⁴ Cf. Brodie and Dixon, this *Journal*, xix. 1904, regarding its absence of action on the muscle of the bronchioles and of the pulmonary blood vessels; and also experiments quoted above on the bladder.

