

sections of this region, the greater portion of the central grey matter is destroyed; lower down it is completely so. According to Brown-Sequard, this is the path by which sensations of heat and cold ascend. The posterior white columns are encroached upon transversely by clot to a slight extent only, so that the great majority of the fibres have their conducting qualities intact. If Schiff's theory is correct, that these latter columns alone conduct sensations of heat and cold, then the tactile impression being conveyed to the brain temperature impressions should also have been transmitted.

This case, I think, supports Brown-Sequard's views.

The facts and theories connected with this particular nerve in this case are, I should say, these:—When patient endeavoured to move his arm, impulses were directed from the cerebrum to the sensory ganglia at base of brain, and there excited motor influence, which was transmitted long the motor tract of medulla oblongata and the antero-lateral columns of the spinal cord to the large ganglion-cells in the anterior cornua of the grey matter, then by the anterior columns and anterior roots of fifth cervical nerve, through brachial plexus and external cutaneous nerve to flexor muscles. Sensation was conveyed from radial side of forearm, by same nerve, through posterior root of fifth cervical, passing both upwards and downwards in the posterior columns to posterior cornua, the external fibres of which run forward to ganglion-cells in anterior cornua, and are then transmitted to brain as tactile impressions. The fibres which are connected with and partly form the central portion of the grey matter and which should by that path, transmit temperature impressions to brain, have their communication with it shut off by the complete destruction by clot of the central grey matter above these fibres.

It is unnecessary to refer to the well-known respiratory symptoms occurring with lesions immediately below origin of phrenic nerve which were present in this case.

With reference to the pupillary symptoms which were present, the seat of lesion afforded no more information than that it was in the path of the fibres which formed part of the cervical sympathetic, the dilator fibres of the pupil being supplied by this nerve.

Budge calls by the name of "*Centrum Cilio-Spinale Inferius*" that portion of the cord between the sixth cervical and second dorsal, which corresponds very closely with the seat of lesion in this case; other observers have, however, placed it much higher, and have had their views supported by physiological experiments and also by pathological observations.

A very interesting problem in connection with this case is the cause of the continued low temperature, quickly following an ordinary febrile temperature. It will have been noticed that during the progress of the case, on the second day after admission into Hospital, temperature was over 104° , subsequently falling to 96° , a bulla having previously made its appearance on foot. According to most observers, the variation of temperature in this case would be accounted for in this way: the same lesion in the cord that caused paralysis of motion would also cause vaso-motor paralysis in consequence of which the blood vessels of the paralysed part were dilated to about twice their size, thereby admitting a larger volume of blood into the cutaneous vessels; this would account for the primary elevation of temperature. Under continued exposure of this larger quantity of blood to the cooling effect of the atmosphere, together with diminished combustion in the anatomical elements of the paralysed parts (the vaso-motor system being the great regulator of nutritive activity), rapid cooling of the parts will ensue. It must be remembered that it is now well established that the spinal cord itself contains vaso-motor centres along its entire length, and it is probable that the same condition that causes abolition of reflex would also keep these centres paralysed. Goltz would say, "actively dilated." Other observers would argue that the increased heat production would be better explained by irritation of the grey matter, quoting in this case, with some show of reason, the coincident appearance of bullæ which in spinal lesions are only seen when these lesions are of an irritative character; for it will have been observed that no bullæ or other cutaneous affection came on after the fall of temperature, nor was there any other appearance of bed-sore. The frequently observed fact of extraordinarily high temperature following spinal injury has been mentioned in support of this view, and also that, in these cases, some