

carefully at this case. The missile entered above the left frontal eminence. There are no special centres known in this portion of cerebral cortex. The missile then passed backwards and across to the other side. By a careful study of the anatomy of the brain it will be seen that the missile followed a course too deep to injure the Rolandic area or the paths from it on the left side; and a course too far back to injure them on the right side. The missile emerged on the right side in such a position as to injure no other centre unless perhaps the auditory one on that side. But this could easily be overlooked, granted that it existed. If the hearing on one side be good, impairment on the other side is easily passed over, and "the organs of special sense" might be reported as "unimpaired." This case also vanishes.

Private Plumly was wounded by a conoidal musket ball, which entered at the inner angle of the left eye, and after passing through the brain substance it emerged behind the left ear." The only symptom of importance was the "obscuration of vision of the left eye." In this case the course of the bullet was too low down to injure cortical centres, not near enough the base to injure cranial nerves directly or indirectly by fractures, and too far from the centre of the brain to touch the tracts in the internal capsule. For an extensive injury it was well calculated to do no special harm.

"Private Sechler was wounded by a conoidal ball that struck the os frontis over the right eye and passed into the brain." "No functional results." In this case again the ball entered at a point where cortical centres of special function do not exist. As no note is made of what course the ball took, or where it stopped, no further notice need be taken of the case, as it presents no features of any interest or value in the discussion. I might mention that it helps to confirm what had already been abundantly proven, that no special centres exist in the frontal region where Sechler was wounded.

Private S. D. Solomon "was wounded by a carbine ball which struck at a point two inches behind the tip of the left ear. The missile entered the brain to the extent of two inches and was not extracted." "No paralysis existed and the functions of the body were generally well performed." The missile in this case would injure the posterior end

of the second and third temporo-sphenoidal convolutions and the third occipital. No one claims that this region of the cortex contains any specialized centres.

Corporal Wood, "wounded by a conoidal ball which fractured the occipital bone and entered the brain. No functional results were seen." Now if the injury did not involve the cuneus or the angular gyrus there would not be any visual derangement. Indeed, unless both eyes were carefully examined, visual disturbances might exist and not be noticed. The case loses weight by the simple fact that we do not know the precise portion of the cortex injured. An injury could occur to the occipital region and give rise to no, or very little, derangement. This case certainly does not prove that surface localizers are wrong.

Private Sheridan was "wounded by a canister shot. The missile entered the left parietal bone, immediately posterior to the coronal and three inches from the sagittal suture, passed horizontally inward a distance of two and a half inches. The ball could not be extracted." He made a good recovery and had no localizing symptoms. The injury was "immediately posterior to the coronal suture." In this situation it would be just in front of the ascending frontal convolution, and consequently the arm and leg areas would not suffer. The wound was too high up to injure the speech centre in Broca's convolution. Again we see the seat of damage was calculated to give rise to no symptoms, and there were no symptoms.

Lieutenant Lilycrantz was wounded by a ball which "perforated the os frontis, over the right superciliary ridge. About a fluid ounce of brain matter had exuded from the wound. A probe, five inches long, glided easily by its own weight its full length directly backwards through the wound without coming in contact with the ball." The man got well and had only some epileptic fits after the injury. The injury in this case, if truly ascertained by the army surgeon, was of a very extensive nature. It does not prove anything, however, against the theory of cerebral localization. There was no post mortem to prove the extent and exact position of the lesion. From all that is known regarding the functions of the brain we can safely say that the ball entered the brain at a point where there are no centres, and passed backwards in such a manner as