

going at a rapid rate. The lesion was a compound fracture at the middle of the superior portion of the left parietal bone, with considerable laceration of the brain. The broken piece of bone was nearly an inch and three-quarters long, three-quarters of an inch broad at one end, and three-eighths of an inch at the other. One edge of this piece was driven down into the brain in such a manner that its surfaces occupied a position perpendicular to their original situation, while the other edge remained in situ, being still attached to the solid bone by the dura mater, which formed a sort of hinge upon which the fragment turned. The history of the case states that the injury had been inflicted by the sharp edge of a stone. After exploring the wound with the points of the fingers—which passed in readily to the depth of half an inch or more—the fragments were extracted by means of forceps. Nearly a tablespoonful of brain substance was lost. At first, the patient was comatose. This state continued for two days. At the end of the second day he had lucid intervals. On the third day consciousness began to return, and with it voluntary motion. At this time the wound was discharging disintegrated brain matter, mixed with grumous blood and pus. Thirteen days after the accident the delirium was gone, but the mind was fickle and temper irritable and capricious. Without entering into the whole history of the case as given, it may be said, the doctor adds, that a month after this lesion had taken place all effects of this severe injury had passed away, except a slight puffy appearance about the face, a little clumsiness in his movements, and some irritability of temper. Since that time, he became as healthy and strong as ever he was. The patient was closely watched during the course of his illness, but the doctor failed to detect any morbid manifestations that seemed to indicate injury to any distinct phrenological development.

It will be seen that no disturbance of functions took place commensurate with the injury, nor were they such as would be expected by the school of surface localizers.

In the Montreal Hospital Reports for 1879, we have two cases recorded. This first is a case of a wound inflicted by a swiftly-revolving circular wood-saw. It produced serious lesion in the cen-

tral part of the first and second frontal convolutions on the left side. The skull wound extended in an oblique direction from above the outer angle of the left orbit across the frontal, through the anterior superior angle of the right parietal and terminated about the centre of this bone. It had penetrated through the membranes, and at the central part the brain substance was lacerated and exposed and could be seen pulsating. The *post mortem* revealed a large rent extending from the longitudinal sinus downward and outward to a point a little anterior to the beginning of the fissure of Sylvius. The central portions of the first and second left frontal convolutions were completely destroyed. The patient was unconscious for about ten minutes after the accident, but when taken to the hospital became *quite conscious* and at that time had no paralysis; nor are we told that either one or the other supervened before death, which took place two days after the accident.

In the same Hospital Reports, the history of a second case is given: A young man, aged 22, was accidentally shot by the discharge of a pistol. The bullet entered the skull above and a little in front of the right ear. From the first he was perfectly conscious, *not paralyzed*, and gave a rational account of how it happened. A probe was inserted into the wound, and it passed freely into the frontal lobe in the course of the bullet. Pulse 60; no elevation of temperature. The accident happened March 8th, 1882, and he died of consumption, August 12th, 1882, following; but between these two periods there was no unusual mental disturbance. Without giving the details of the autopsy, suffice it to say, that the bullet entered the brain substance in the right inferior frontal convolution, just in front of the ascending branch of the Sylvian fissure. From this point the course of the bullet was upwards and forwards, passing out at the inner surface of the frontal lobe and lodging between the brain substance and the falx, where it lay surrounded by a firm membrane. A firm membranous canal marked the course of the bullet, and the brain substance about this was somewhat softened. This extensive destruction of brain tissue did not disturb the mind.

M. Flourens, of Paris, some years ago, experimented on animals, not only to show the curability of brain substance, but also to demonstrate how