With these very brief remarks I proceed to experiments:—

The first of these consists in dividing the cerebrum, the cerebellum inclusive, from the medulla oblongata. I thus separate the centres of the cerebral and the spinal systems, and consequently the systems themselves, their functions and their phenomena, from each other.

Now perception and volition, and voluntary and spontaneous movements, the allies of these, reside in the cerebral system.

I make the division to which I have adverted, either by passing a couching needle, so as to sever the cerebrum from the medulla oblongata, or by removing the head at once, at the same point, by a pair of sharp scissors.

There can, of course, be no manifestation of cerebral phenomena in the head, even supposing feeling and perception to exist. There can be no manifestation of cerebral phenomena in the remaining portion of the animal, because the cerebrum is removed or separated from it. What phenomena then remain in it?

If sensation, and perception, and volition are functions of the cerebrum exclusively, there can be no phenomena dependent on these; that is, there will be no voluntary, no *spontaneous* motion, no movement the result of *design* on the part of the animal. This fact presents us with the *experimentum crucis* in regard to the questions—In what part of the nervous system do perception and volition reside? Are they limited to the centre of the cerebral system? Or do they extend to and exist in that of the spinal system also?

There are two modes of irrefragably replying to those questions. The first consists in an appeal to the human subject in cases of injury separating the influence of the cerebrum from that of the spinal marrow. Is there perception or volition in any part from which the influence of the former of these is removed? The second consists in an appeal to experiment. Is there spontaneous motion in any part of an animal from which the influence of the cerebrum is separated, that of the spinal centre alone remaining?

I have recently, in July, 1853, had the opportunity of examining, with Dr. Small of Toronto, a patient perfectly paraplegic to perception and volition *below* a certain line a little below the margin of the ribs. Accepting the testimony of this patient, the proposed question is decided negatively.

In similar instances of injury or disease of the spinal marrow, the same fact, the same proof of the entire absence of perception and volition below the destroyed portion (as to function) of the spinal centre, have existed.

I take a frog and pass this needle between the cerebral and spinal centres; the animal is instantly deprived of movement. But this is the effect of *shock*—we must wait a few minutes. Now, you observe that I