

being at the middle of the mass, and having a ratio to the length of 1 to $1\frac{1}{2}$. Far from being concealed, the cerebellum projects behind the cerebrum to the extent of one inch, and forms a fourth part of the whole mass. In the base view the relative preponderance of the cerebellum is again the most striking feature—

Antero-posterior diameter of the cerebrum.....	5 inches
Hemispheric arch:.....	6 "
Anterior curve (fiss. of frnt. lobe to fiss. Rol.)	3 "
Middle " (fiss. Rol. to par. occip. fiss.)	1 "
Posterior " (par. occip. to fiss. of occip. lobe)	1 "

The frontal region is short and pointed; the orbital surface but slightly marked. Temporal convolutions are large, and are continued backwards into the occipital lobes, which are exceedingly small, and cannot be definitely divided into their ordinary number of convolutions. The central lobe is exceedingly small. The parts which can be detected as actual convolutions are: Frontal parietal lobules—temporal, marginal, callosomarginal, cuneate and præcuneate lobes. Less easily the orbital, occipital and central lobes—triradiate sulcus, corpora striata and optic thalami. On the right side the fissure of Sylvius is continuous with the post-central and interparietal sulci. On both sides the calcarine fissure is represented by two parallel sulci separated by a ridge of convolutional substance better marked on the right side. Further development of the convolutions above and below would have concealed this ridge and left a single fissure. Cerebellum more highly developed than the cerebrum.

Dr. HENRY HOWARD made the following remarks on the brain demonstrated by Dr. Sutherland:—With your permission, Sir, I will read a copy of a letter I wrote to Dr. Richard MacDonnell bearing date September 16, 1883:

"I have a perfect recollection of the man that you spoke to me of. He was admitted into the asylum as a dangerous imbecile, a man with homicidal tendencies. When I first saw him I was struck with the peculiar shape of the head. It was conical. The apex of the cone appeared to be at the union of the sagittal and lambdoidal sutures. The os frontis ran back as if it formed a part of the point of the cone. The base of the cone was out of all proportion with the face, being nearly twice as large. The head and face formed two lines, and their bases united. The man's eyes were small and gray; he was what you might call pig-eyed. His walk was that of a man with locomotor ataxia. When he came towards you, you felt as if he would run over you.

Physiological symptoms.—He was generally very good-natured, but terribly impulsive; the

slightest thing would rouse him into a fury, when he would froth at the mouth, and not be able to utter a word. At the best of times he spoke with hesitation, not impediment of speech.

"I know nothing of what disease he died of. It must have been a sudden death, as I never saw him in the Infirmary, and I see all the patients every week. I have no history of the man before he was admitted into the asylum. In your examination of the brain I would expect you to find the following conditions: Convulsions, particularly in the lateral and anterior portions of the hemispheres, flattened, with irregular and shallow fissures; the cells in their cortical substance (that is, of these convulsions) few and small,—in fact, teratological defect in the whole of the motor and inhibitory nerve centres. And why would I expect you to find this abnormal state? Because the man was a very low order of imbecile, but little intelligence and no power of controlling his impulses. I would expect to find some abnormal state of the Island of Reil, or the convolutions covering it, because of the hesitation in his speech. I would not expect to find much abnormality in the convulsions or gray substance in the posterior lobes of the hemispheres or sensory nerve centres, because I never found any symptoms of either *naesthesia* or *analgesia*. There was such a want of equilibrium in the man's movements, and he was such a victim of impulse, I would expect to find a very abnormal state of the *mesencephalon*, particularly about the basal ganglia, such as the *corpus striatum* and *optic thalamus*. I would expect the cerebellum to be large, and not covered by the posterior lobes of the hemispheres. There may be other abnormalities in the *mesencephalon*, but those I have mentioned I would expect to find.

Yours always, H. HOWARD."

From the demonstration given you by Dr. Sutherland you will perceive that, guided by experimental and clinical physiology, I made a good diagnosis of the teratological state of this man's brain, so far as the examination has gone, the doctor not having cut into the brain or made a histo-pathological examination of it. I admit that, in diagnosing flat convulsions and shallow sulci, I was as much guided in forming my opinion from the shape of the cranium as I was from the man's peculiar hesitation of speech and conduct. Judging by the frontal and lateral convolutions of the anterior hemisphere, we may easily conclude that there was teratological defect in the Island of Reil. Neuro-pathologists tell us that in the normal brain there are forty-four convolutions, and that sixteen of these are situated in the frontal lobes. In this brain there are only thirty convolutions, and eight of these in the frontal lobes. Mind, at least as we know of it, being a phenomenon or force of matter,