of the motor areas of the brain. In a general way they locate the movements of the leg, in front and behind the upper third of the fissure of Rolando. The middle third of this fissure includes the movements of the arm, and from above down in the following order: Shoulder center, elbow center and hand center. The lower third of this fissure is surrounded by the face, mouth and larynx centers, and between the ends of the fissure of Rolando and the fissure of Sylvius is located the center of speech. Hearing is located in the middle and posterior parts of the temporo-sphenoidal convolution.

Dr. Stratton, of Oakland, has had under his care a very interesting case of brain tumor. By his permission I have made use of a few of the most interesting points in the case. The patient, a female, aged 42, no history of constitutional disease in self or immediate family, suffered since 1894 with nervous disorders. There were tonic spasms of upper and lower extremities, below the elbow and knee respectively. She had no motor or sensory derangement until July, 1895, at which time she had numbness of the toes and pain in the entire foot, except the four outer toes, with only brief intervals of relief. The great toe became permanently extended. In February, 1896, there were tonic spasms lasting three to four minutes in the muscles below knees, no unconsciousness, although convulsive seizures took place every three to four weeks. October, 1896, there were clonic spasms of right side except face, followed by numbness of the tongue and the right side of body. On October 26, a clonic spasm, right side, with unconsciousness, took place. There was frothing at the mouth. Subsequent to this the arm and leg began to lose strength. This condition was more apparent in leg than in arm; and after each seizure, this loss became more marked.

December, 1896, rectal incontinence began, followed soon after by cystic incontinence. Accompanying these conditions were complete paralysis of the extensor and flexor muscles of the toes of the right foot, and the paresis above in leg, trunk, arm, forearm and side of face on the same side. There were no headache, vomiting, or constipation, and mental faculties were not disturbed. At this time the pot. iodide was prescribed, and after a short time the dose was increased to half an ounce each day. This medication was resorted to from time to time for several months. At first under this treatment the patient improved, spasms and post convulsion numbness became less, though there was rectal incontinence during the time.

After several months the symptoms, that is, convulsions, paresis, incontinence became as severe as before. On March 15, 1897, Dr. Stratton trephined the skull at the upper extremity and a little behind the fissure of Rolando, i.e., over the upper part of the ascending parietal convolution, the trephine opening overlapping the fissure. Upon removing the bone button and incising the dura a tumorous mass bulged into the opening. The opening was enlarged by removing two other buttons with the trephine and the use of the rongeur forceps. The tumor, which proved to be a fibro-sarcoma, was easily dissected away from its bed. In fact, as soon as the dura was incised the brain almost pushed it through the aperture in the skull. The cavity was subsequently packed and the dura stitched, only leaving an opening for the purpose of removing gauze and redressing. The cavity in the brain filled in about a week. Convulsions ceased and paresis improved. In December, 1897, performed a second operation for the purpose of separating and cutting away scar tissues in the wound which were causing some disturbance. While so doing the doctor found another small fibro-sarcoma attached to the falx cerebri and longitudinal sinus. He clamped the longitudinal sinus on each side of tumor and ligated and removed section with tumor. Patient lived only a few days after this operation. Post mortem showed that clot formed from the posterior ligature back to lateral sinus, also in straight sinus, but there was no clot in front of the anterior ligature.

In citing a few cases that have come under my personal observation,