and probably all cases included under that name were examples of alcoholic paralysis. Peripheral neuritis was not a distinct disease, but a substratum underlying the symptoms of several very different affections.

Professor BROWN-SÉQUARD considered that the effect of vaso-motor influences in producing tissue-change was unduly exaggerated. He pointed out the necessity of remembering all the causes which operated in this direction: (1) changes in the chemical constitution of the part; (2) the blood-attracting influence of local tissue-change; (3) the temporary suspension of the ordinary relations between the blood and the tissues. Under some circumstances of injury, etc., the blood in the veins came to resemble that in the arteries. All these conditions were produced through the influence of the nervous system.

Dr. HYL A GREVES described the pathological changes found in two cases of alcoholic paraplegia occurring in the Liverpool Royal Infirmary, under the care of Dr. Glynn. In the first case, a woman aged 48, who had drunk largely of brandy for some time, had suffered from *delirium tremens*. When admitted, she was greatly emaciated, and had a large bed-sore over the sacrum. The nervous symptoms were paresis of the lower extremities, loss of knee-jerk, pain on pressure of muscles, cutaneous anæsthesia and analgesia, burning pains in the soles of the feet. She died from septicæmia following septic absorption from the bed-sore. On *post mortem* examination of the nervous system, the following changes were found. In the spinal cord, there was distinct ascending degeneration in the cervical region. The cord otherwise appeared normal. The peripheral nerves of the extremities were more or less affected, especially the cutaneous branches, the mixed nerves being affected in less extent. There was complete atrophy of a certain number of nerve-tubes in others and degeneration of the white substance of Schwann, which was split up into masses of myelin. There was also granular degeneration of the axis-cylinders. The ganglia in the posterior roots of the spinal nerves were also altered. Some of these cells were much degenerated, and the surrounding connective tissue was markedly increased; it was possible that this had something to do with the production of ascending degeneration in the cord. Similar changes were found in the second case.

Dr. WHITTLE said that the speculative problems of the subject were beyond the province of the general practitioner, but he proposed to deal with it in its clinical aspects. He had seen a case of subcoracoid dislocation which remained unreduced for about six hours, during which the patient travelled a distance of ten miles. After reduction, all went well for a day or two, when pain came on, starting in the shoulder, and radiating round the back of the arm in the course of the musculo-spiral nerve, which was distinctly tender. At the elbow, the pain became diffused, but subsequently was most intense in the hand. Atrophy of muscle commenced in the upper arm, but extended to the forearm. The ball of the thumb wasted extremely. Pain was very severe, and only relieved by hypodermic injections of morphine. Recovery took place in three months. In another case, a horny growth, causing pain disproportionate to physical evidence of disease, was removed; but the pain was intensified, and rapid atrophy of the muscles of the leg followed. After amputation of the toe, the pain was much relieved. The atrophy was arrested, and the patient slowly recovered.

CASE OF EPILEPSY OF SIX YEARS' DURATION. COMPLETE RECOVERY AFTER SURGICAL OPERATION ON THE SKULL AND BRAIN.

By A. HUGHES BENNETT, M.D., F.R.C.P.,

Assistant-Physician to the Westminster Hospital; Physician to the Hospital for Epilepsy and Paralysis, Regent's Park.

WITH REMARKS ON THE SURGICAL ASPECTS OF THE CASE

By A. PEARCE GOULD, F.R.C.S.,

Assistant-Surgeon to the Middlesex Hospital; Surgeon to the Hospital for Epilepsy and Paralysis, Regent's Park.

THE interest which is being taken in the application of surgery to cerebral diseases induces me to place the following case on record. Although it is admitted that sufficient time has not yet elapsed to ensure certainty as to the permanence of the so far successful results of the operation, I think it advisable, without further delay, to add another contribution to a subject which, at the present time, is so much occupying the attention of the profession, as every additional fact cannot fail to be acceptable to an important practical inquiry which may be looked upon as still undecided. That frequently repeated epileptic attacks, which had been persistent for a period of no

less than six years, and so severe that the patient had been confined in a lunatic asylum for half that time, should by any procedure be suddenly arrested, and the satisfactory condition maintained for six months, is in itself encouraging regarding any proposed method of treatment, and, as such, worthy of note. In addition, however, this case presents other features of interest from a scientific and physiological point of view, which have been enhanced by the results of the operation, as it had been ascertained that each seizure was preceded by a visual aura, and followed by hallucinations, all of which have been entirely removed by trephining over the angular gyrus—a convulsion of the brain which recent researches have determined to be closely associated with the sense of sight.

W. A., aged 36, married, a stationer, with good family history, and without syphilitic antecedents, states that six years ago he received a violent blow on the right side of his head, by being forcibly thrown against a wall. At the time he was stunned, and was taken to the Middlesex Hospital, where it was found that he was suffering from a scalp wound, without apparent injury to the skull. In a few hours the patient regained consciousness, and, after his wound had been strapped up with plaster, he returned home, and, with the exception of headache and local soreness, was seemingly well. A few days after, the cut had healed, and he was in his usual good health. Six weeks later, he was suddenly seized with a convulsive attack, in which he lost consciousness, and it was observed that the movements of the limbs were confined to the left side. A fortnight afterwards there occurred a similar attack, and these have continued at irregular intervals ever since. He calculated that during the past six years there had been on an average one fit a week. His general health continued good; but after most of his attacks he was seized with violent mania, which rendered him dangerous to all around him, each of these seizures lasting many hours, and even days. He was, on this account, at various times an inmate of the Middlesex and St. Bartholomew's Hospitals, Highgate Infirmary, and other institutions; but in none of these did his condition improve. On the contrary, the violence after the attacks became such that, in February, 1882, he was sent to Camberwell Asylum, where he remained three years. In the report of his condition, kindly sent me by Dr. Schofield, his attacks are described as "of a very severe type; at those times he is most dangerous to those around him, and it takes four men to hold him down and prevent him injuring himself." Treatment of all kinds was tried without material benefit. He was admitted into the hospital under my care in May, 1886.

He was a tall, fair, somewhat delicate looking man, but otherwise in good health. All the organs and functions of the body were normal, and intelligence appeared to be unimpaired. Over the right parietal bone was a transverse cicatrix in the scalp. This was movable; no abnormality could be detected in the bone beneath it, and there was no tenderness on manipulation. On one or two occasions, hard pressure caused the sensation of a flash of light, followed by temporary loss of consciousness, lasting for a few seconds. The exact site of the centre of this scar was $3\frac{1}{2}$ inches from the longitudinal fissure, in a line drawn vertically $2\frac{1}{2}$ inches behind the external meatus of the ear. Nowhere was there any trace of paralysis or loss of sensation. The special senses were normal; the fundus of each eye was as in health, and the patient was in all other respects, physically and mentally, in sound condition.

The patient remained for nearly two months in the hospital under observation. During this time he had weekly epileptic attacks, none of which I myself had an opportunity of observing. The nurse, however, asserted that the attack was preceded by irritability of temper, and a tendency to let things fall. Then he somewhat suddenly lost consciousness, and had general convulsions, most marked on the left side, the whole seizure lasting from five to ten minutes. On recovering, he was only partially conscious and very violent, rushed about the ward, shouted, called out to and threatened imaginary people, and, when held, struggled and hit out with his fists. In from half an hour to an hour he gradually calmed, and fell asleep; after a few hours he woke with headache, and was dull and drowsy. Next day the patient was in his usual condition. On interrogation he asserted that immediately prior to the attack he saw a bright red light in front of his eyes, soon after which he lost his senses. He had no recollection of any hallucinations after the fits, but during them he certainly acted and spoke as if he saw people and other threatening objects.

The condition of the patient being very serious both to himself and his friends, as all ordinary methods of treatment had failed to give him any relief, and as he was anxious to adopt any means which offered the slightest chance of amelioration, I determined to have him trephined over the seat of the original injury to the scalp, in the hope that there might be a possible depressed fracture, or some other local or remov-

able injury to the underlying cortex cerebri. This was carried out by my colleague, Mr. Pearce Gould, on July 8th. A large trephine opening was made at the seat of the cicatrix. The portion of bone removed was perfectly normal, and so was the dura mater underneath. A circular portion of this was also excised, when the exposed cortex was seen to be apparently healthy. At my request, Mr. Gould then explored in three or four different directions the cerebral substance, for about an inch in depth. This was done as an exploratory measure, so as to exclude the possibility of an abscess, cyst, or tumour being in the neighbourhood. Nothing abnormal, however, was detected. The wound was then closed, and the subsequent surgical treatment was conducted by Mr. Gould, to whose skill and attention the further successful progress of the case is undoubtedly due. The man recovered without a bad symptom.

On July 20th, the patient again came under my care, his wound having completely healed. He had not had any attack, and, with the exception of being pale and weak, was in good health. A few weeks afterwards he was sent to a convalescent hospital.

On December 8th—that is, exactly five months after the operation—the patient was in perfect health. For some time past, he had been at his work, and earning his living as before the accident. He has had no attack of any kind. Physically and mentally, he appeared to be in a sound and robust condition.

Commentary.—In this briefly recorded case, two points seem worthy of comment: 1. The result of the operation on the symptoms. 2. The nature of the epileptic attacks.

1. Any special surgical features of interest I leave Mr. Gould to relate. To the physician, the fact of importance is, that violent and frequently repeated epileptic seizures, which had existed for six years, were completely arrested by the surgical manipulations described, on the area which was presumably the original seat of the cortical irritation, although nothing abnormal could be detected there. I will not speculate upon the explanation of this result, but content myself with recording the fact. Such effects are by no means unknown, although the proceeding to obtain them is rarely put into practice. In cases in which a local aura can be traced, and which resist ordinary medical remedies, might not this method of surgical treatment be more frequently resorted to? The danger from the operation itself is, under suitable precautions, probably not great, and this instance shows that a hope of recovery is offered in what seemed otherwise to have been an incurable case.

2. The attack was usually preceded by a bright red flash of light, and it was followed by what were apparently visual hallucinations of different objects. The cicatrix on the scalp and the subsequent trephining were situated over that region which corresponds with the angular gyrus. These facts seem to me to be of great scientific interest, showing that interference with the function of this convolution induces subjective sensations of light and possibly also of things. Physiological experiment seems to have demonstrated that this gyrus has close relations to the sense of sight, and to the appreciation of external objects. The sensation of light at the beginning of the attack in this case might therefore be explained by the initiating irritation of the cortical visual centre. It is possible also that the mania following the fit, which appeared to be accompanied by visual hallucinations, may have been associated with some functional disturbance of this convolution. After an epileptic seizure, the effects of exhaustion rather than irritation of the cerebral centres would have been anticipated, and how far hallucinations are the result of diminished functional activity is, I suppose, an uncertain question. These might at least be assumed to be the result of irregular or disordered activity, which in its turn might be the product of debility or exhaustion. Both the initiating sensation of light, and the concluding appearance of images, were induced by the same cause, acting on the same centre, namely, the effects of a blow over the angular gyrus, and both were removed by measures directed towards this locality. The patient, in his usual inter-paroxysmal state, had normal vision, and no opportunity was afforded me of ascertaining the condition of his sight immediately after the attacks, with the view of determining if temporary amblyopia existed. An exploding lesion of the angular gyrus might theoretically induce this effect. Singularly enough, since his recovery the patient has forgotten all about either the lights or the hallucinations, and is now unable to recall their nature, although formerly he described them with some accuracy.

In my other case, where a tumour was removed from the Rolandic fissure, I observed somewhat similar phenomena as in the present instance, that is, the presence of subjective visual hallucinations. After death the angular gyrus was found to have been partially injured.

REMARKS BY MR. GOULD.—The operation was performed with the usual antiseptic precautions; the entire head was shaved on the day preceding the operation, then well-washed, first with soft soap and then with carbolic acid lotion (5 per cent.), and a cap of wool, soaked in this lotion, was worn for several hours. Immediately before the operation the scalp was again well washed, and on its completion the wound was well irrigated with corrosive sublimate solution, 1 in 2,000, and dressed with Salalembroth wool. The wound in the scalp was united by gut sutures, a drainage tube being placed in the most dependent part. The tube was removed on July 9th (the day following the operation), and the wound was next dressed on July 15th, when it was found to be firmly healed, except where the tube had been, and there it was beginning to epithelialize. Morphine ($\frac{1}{4}$ grain) was injected under the skin before the anæsthetic was administered.

The scar of the injury was devoid of special features—it was not adherent to the skull, neither painful nor tender. No change could be observed in the bone, either before or at the operation. The exposed dura mater showed three small specks of a yellow colour; the circle that was removed was free from arachnoid adhesions, and its deep surface was perfectly normal in appearance. The brain itself was explored by the introduction of a fine knife, and then of a director, and subsequently by puncture with a hypodermic syringe in four directions. Nothing was observed which seemed to explain the mode of production of the epileptic attacks, nor the beneficial results of the operation. The convalescence of the patient was uninterrupted; there has been no tendency to hernia cerebri, and the covering of the brain is firm.

SURGICAL MEMORANDA.

MIRRORS FOR OPHTHALMIC AND OTHER OPERATIONS.

IN England, during the winter months, the usual daylight is frequently not sufficient for ophthalmic and other operations, nor are operations confined to the few hours during which daylight is present. When operations are performed under such disadvantages, the use of a large concave mirror, of eight or more inches focus, placed upon the brow, will be found of great service. By its means the operator may use artificial light of weak intensity to greater advantage, and regulate its degree and position in a manner he cannot otherwise do.

By using a mirror with two apertures, the ametrope may arrange the lenses he requires behind the mirror; so that he avoids creating the silly impression which sometimes possesses the patient, that any one requiring lenses to operate by is not so reliable as one who can act without them. Presbyops may find this especially useful. A parallelogram form of mirror is, for this purpose, probably better than the round.

W. LAIDLAW PURVES, Stratford Place, W.

THE IMMEDIATE TREATMENT OF WOUNDS OF THE FACE.

IT has been said by a writer of distinction that the chippings of Phidias were better than the fine work of inferior sculptors. Not to press a metaphor too far, we may at least confess that we gladly accept from the magnates of surgical art stray hints on the management of common accidents, which every one is supposed to know.

On the afternoon of June 19, 1886, a boy at the Bath College was hit by a cricket-ball on the face, which was severely cut. The wound was as neat and clean as if done by a knife, transverse in direction, and parallel with the circumferential fibres of the orbicularis muscle below the right eye. The bleeding had nearly stopped when the boy was brought to my house, and there was little or no contusion around the wound.

Now, I had read a little while before (*Edinburgh Medical Journal*, December, 1885) a suggestion by Professor John Chiene on the treatment of wounds of the face. "The best stitch to use," he says, "is horse-hair. The best dressing is a pad of salicylic cotton-wool, fixed in position with flexile collodion." Surely the ideal of cleanliness and simplicity! Dr. Chiene's directions were literally and carefully carried out in the case of my own patient, and with perfect success. Only one stitch was necessary; the wool protected the injured part from organic harm, and the collodion kept everything in position. The dressing came off within ten days; the healing process was completed, and there was hardly any scar.

JOHN KENT SPENDER, M.D.Lond., Bath.

BEQUESTS AND DONATIONS.—The Great Northren Central Hospital has received £50 from the Ladies' Association connected with it.