

the population, would seem, from statements made to me at some of the trading stations on the east, north, and west coasts, to have been slightly higher in other parts of the country. The cold and damp character of the summer, caused by the unusual and protracted visit of the Polar ice to the north and east coasts, would naturally heighten the mortality, which must also have been increased in some measure by culpable negligence on the part of the patients and their friends. The factor at a large and important trading station on the south coast informed me that people came from the country round about to transact business with him while the measles exanthema was actually present on them! Little wonder that, as he said, "they went home and died."

ARTICLE VI.—*A Case of Brain Tumour.* By J. CARLYLE JOHNSTONE, M.B., Senior Assistant Physician, Royal Edinburgh Asylum.

MRS W., æt. 50, widow, small shopkeeper, admitted into Royal Edinburgh Asylum April 2, 1882.

The *history* obtained was meagre and unsatisfactory. She appears to have been a sober, hard-working woman, burdened with the cares of widowhood and a family, and of late vexed with business anxieties. There was an hereditary predisposition to insanity, an aunt having been insane; and it is stated that patient's mother died "from rupture of a bloodvessel in the brain," while her father's death is attributed to white swelling of the knee. Until two years ago she had good health, and then she had a "fit," the nature and details of which are not forthcoming. About twelve months afterwards, signs of mental aberration were observed. She became depressed in spirits, took strange fancies, and suffered from sleeplessness and giddiness. Two months before her admission she had a "shock," and her "face was twisted." Since then her speech has been affected, and motility generally has been impaired, while there has been a steadily increasing confusion of mind, with an almost constant feeling of giddiness. She exhibits delusions which are indicative of a painful sense of physical instability and mental uncertainty. She is continually seeing "holes in the floor," and she mistakes the actions of persons about her, fearing vaguely that they are going to injure her.

Present Condition.—She is a well-nourished woman, with a round, moon-like face, a blank, foolish expression, thin brown hair, and gray eyes. There is general impairment of muscular power, the lower limbs being chiefly affected. She cannot stand erect, though she can move her legs about in bed. The grasp of both hands is feeble. The paresis does not appear to affect the limbs of one side more than the other. The right side of the face is flatter than the

left, and responds less readily to the expression of the emotions; the right angle of the mouth droops slightly. The tongue is tremulous and unsteady, has a beef-steak appearance, and can be protruded only a little beyond the incisors. Articulation is faltering and laboured, and there is a degree of immobility about the lips. There is distinct difficulty of swallowing, and occasionally a spasmodic choking sound in the throat is heard. A want of co-ordination is observable in the movements of the limbs, with general restlessness of the muscles. Sense of touch, sensibility to pain, and cutaneous reflex excitability are good. The pupils are equal, and react sluggishly to light. There is evidently an impairment of vision, but hearing is acute, and the other special senses do not appear to be defective. Percussion and auscultation of the lungs give normal results, but frequently a sighing respiration is remarked. The cardiac sounds are faint and obscure, area normal; pulse, 92, very compressible. Temperature, $97^{\circ}2$. Appetite good. Bowels constipated.

The intellectual faculties are greatly obscured, memory is very defective, and the healthy control of the emotions is greatly impaired, as shown by the readiness with which the patient can be made to laugh or weep. When left to herself she chatters away in a subdued tone of voice. When she is addressed her face assumes a slightly perplexed look, and she usually either makes no reply or utters some irrelevant expression. Her almost only rational utterances are brief ones, such as "yes" and "no," and the naming of things. When she attempts to give a lengthened reply to a question, she has a difficulty in finding the right words, and puts in wrong ones, repeats words which have just been uttered in her hearing, but which have no bearing on the subject, soon forgets what she is talking about, and relapses into incoherent nonsense. She recognises the right word at once when it is suggested to her, and has no difficulty in repeating it. She recognises and names correctly any things that are shown her. Such of her statements as are intelligible reveal absurd and illogical delusions. Thus when asked where she is now, she answers calmly, "In hell." She says that her son has been sent to hell, and then she weeps. She says that she is 24 years of age, that she was 53 "when she came in," that she is now 44, etc.

Progress of Case.—April 5.—Since her admission she has had plenty sleep, has taken her meals heartily, and has been free from any active excitement or intractability. She is, however, very restless, tumbling about in bed, and fumbling stupidly with her clothing. The mental obscurity is less marked, and the aphasic phenomena are not so striking. She understands what is said to her, but, owing to her greatly impaired power of attention and her forgetfulness, her replies are often very irrelevant, and she has a trick of catching up words uttered in her hearing and introducing them into her remarks in an absurd manner. The difficulty of

articulation is very distinct. Swallowing, also, is performed with great difficulty, and is frequently accompanied by an alarming choking sound. She suffers from constipation, but the bowels are kept open without any difficulty; otherwise no special treatment is being adopted. The temperature is normal, and pulse varies from 90 to 100.

April 22.—Since last report there has been a great improvement in the symptoms. She has gained considerably both in intellectual activity and muscular power. There is greater freedom of speech and a more rational use of words. She is tolerably cheerful, takes a mild interest in her surroundings, is grateful for attentions, and keeps her emotions more properly under control. She can sit erect, can use her hands and arms to greater purpose, has a more lively expression of face, and shows less general incoordination of movement. Deglutition is much less difficult. She suffers at times from headache, which does not appear to be severe, and is not referred to any particular region of the head. A feeling of giddiness is always present. Frequently there is intense flushing of the face, which is very transient, and is not accompanied by any general increase of temperature. Vision is uncertain, objects appearing to swim before her eyes when she looks at them fixedly, but hearing is not defective. Ordered thirty grains of bromide of potassium three times daily.

May 15.—During the last three weeks patient's condition has steadily improved in nearly every particular. The mental obscurity and weakness are not more marked than they would be in any case of convalescence from a severe illness. She takes an interest in what passes around her, behaves in a cheerful and sensible way, and converses intelligently. Beyond a slight quaver or falter in the articulation, no aphasic signs are perceptible. The impairment of deglutition is very slight. She rests well at night, rises nearly every day, and can walk about a quarter of a mile without assistance. Her gait is slow and unsteady. She frequently tries to do a little house work, but she is unable to sew or knit owing to her uncertainty of vision and a still existing want of precision of movement. The defect of sight also prevents her from reading. At times she spends a day in bed, complaining of weakness, headache, and giddiness, and there is then some confusion of mind, while the flushing of the face and scalp, though not so intense as formerly, is usually remarked.

June 3.—This pronounced improvement continued until a few days ago, when a sudden and decided change for the worse set in, marked by great confusion of mind and impairment of muscular power. She now lies tumbling about restlessly and stupidly, and fumbles with the bedclothes; her face and scalp are intensely flushed; her expression is blurred and foolish; she takes no interest in anything that occurs near her; she does not clearly understand anything that is said to her, and replies to questions

in an irrelevant and incoherent manner, while at other times she mutters to herself unintelligibly. Temp. 98°; pulse 84.

June 18.—Since last note there has been a steadily increasing impairment of the mental and physical powers. For the most part she has been too stupid to take notice of anything, but at times her mind has been a little clearer, and she has been able to give brief answers to inquiries as to her state of health. Frequent intense flushing of the face and scalp has been present. Deglutition has been very defective. There have been changes in the respiratory rhythm, with sighing respirations. Optical illusions have been remarked, as indicated by her greeting strangers as old friends. The pulse and temperature have been little affected. Sugar is present in the urine. For some days she has been in an almost unconscious state, has swallowed only a little milk, and has passed all her evacuations in bed. Between three and four o'clock this afternoon she was reported as having had a severe epileptic fit, the convulsions being general, and affecting both sides equally. When seen by the writer a few minutes afterwards, her face was of a deep purple hue, the veins of the head and neck were swollen, the breathing was greatly embarrassed, and her mouth was full of glairy mucus, which she had no power to expel. She had bitten her tongue. She regained consciousness slightly, and breathed more freely, but at ten o'clock she had another but slighter convulsive seizure.

She gradually sank, and died at 3.25 A.M. on the 19th June.

Autopsy thirty-three hours after Death.—Body fairly well nourished.

Cranium.—Skull-cap symmetrical; some hyperæmia of bones. Dura mater injected. Pia mater and arachnoid somewhat thick; strip readily from the brain matter. The surface of the hemispheres presents a dry and glazed appearance, the convolutions being flattened and compressed, and the sulci nearly obliterated. Large black veins run along the lines of several of the larger sulci. The basal arteries and their branches, as far as they can be traced, are free from disease. The infundibulum forms a prominent projection, being buoyed up by fluid. Section of the hemispheres displays an abnormally large number of visible vessel points, with enlargement of the perivascular canals, while the cortical matter is thinner than usual. The lateral ventricles are considerably distended with clear fluid, as are also the third ventricle and the *iter a tertio ad quartum ventriculum*. The floor of the lateral ventricles is finely granular. At the anterior part of the left caudate nucleus there is a shallow depression admitting the point of the little finger, but otherwise the basal ganglia are free from gross lesion. On raising the lobes of the cerebellum and cutting through the arachnoid screen, a tumour is discovered occupying the entire cavity of the fourth ventricle. This tumour is ovoid in shape, and lies obliquely on the floor of the ventricle, a slight annular con-

striction dividing it into an anterior and right lobe and a posterior and left one. About two-thirds of its substance are to the left of the middle line. It measures about $1\frac{1}{2}$ inch in length, from $\frac{3}{4}$ to 1 inch in width, and $\frac{3}{4}$ inch in depth. It is of a soft, brain-like consistence and grayish colour, and several small vessels can be traced on its surface and entering its substance. From its position it has evidently acted as an obstruction to the passage of the cerebro-spinal fluid from the third to the fourth ventricle, and has interfered with the return of the blood through the straight sinus. The tumour apparently arises from the floor of the ventricle, from which it can be readily detached, leaving an eroded surface. Its attachment extends over the whole of the left half of the floor anterior to the transverse striæ, and encroaches slightly on the right half of the floor, while posteriorly it passes slightly beyond the left striæ, only a small area at the origin of the fibres being uninvolved.

Microscopic sections show the growth to be composed of a fibroid corpusculated meshwork, the openings of which contain collections of cells of very various sizes and shapes, the predominating forms being columnar and pyramidal. Spindle cells are abundantly present in the stroma, in which numerous bloodvessels ramify. In many places columnar cells are paved side by side along branching lines, and form finger-like processes.

Beyond a slight expansion of the floor of the fourth ventricle, there is nothing remarkable in the appearance of the pons, medulla, or cerebellum.

The optic nerves are normal in appearance, and the other cranial nerves do not appear to be diseased in any way. The encephalon weighs $46\frac{3}{4}$ ounces.

Thorax.—*Heart*—Right cavities full of black liquid blood and soft black clots; left cavities have similar contents, but less in quantity. *Lungs*—Lower lobes engorged with black blood.

Abdomen.—*Liver* and *spleen* slightly congested. *Left kidney* contains two cysts. Urine shows traces of albumen and a considerable quantity of sugar.

Commentary.—In addition to the general symptoms of an intracranial growth which were present in this case, there are several other points of interest which seem worthy of remark. The peculiar position of the tumour was indicated in a striking way by many of the symptoms, the most important of which may be here recapitulated. Of those "centres" which are situated in the medulla oblongata, there was distinct implication of the respiratory with its neighbouring convulsive centre, as indicated by the peculiar sighing respiration, the convulsive seizures, and the manner of death; the vaso-motor centre, as shown by the flushing of the face and scalp; the diabetic centre; and the centre for deglutition. To these phenomena must be added the disorders of articulation, motor coordination and vision, the paresis of the extremities,

the psychical disturbances, and the headache and giddiness. As is usual in cases of tumours which have their seat in this region, there was a degree of hydrocephalus internus, due to the pressure of the growth on the veins and its obstruction to the return of the cerebro-spinal fluid into the subarachnoid space. (See cases by Dr Moxon, *Lancet*, 2nd April 1881; and Dr Bastian, *Lancet*, 19th and 26th June 1880.) To this obstruction the psychical disorder may in part be attributed, and in part to the increased intracranial pressure exerted by the tumour itself.

The most interesting feature in the case is the remarkable remission in the symptoms. (See somewhat similar case by Dr Burney Yeo, *Brain*, vol. i. p. 273.) Intermissions in the symptoms of brain tumours have frequently been observed in the early stages of the disease, and have been ascribed to alterations in the bulk of the tumour, subsidence of œdema or inflammation of the neighbouring tissues, accommodation of surrounding parts, etc., but it is difficult to understand how, in the advanced stage which the disease must have reached in the present instance, such a decided rally could have occurred. It is possible that there was a slight shifting of the position of the tumour, causing it temporarily to cease to act as an obstruction to the passage of the cerebro-spinal fluid.

Owing to the imperfect history, it is impossible to say much as to the causation of the tumour, but it will be seen that hereditarily there was a predisposition to nervous disease.

ARTICLE VII.—*Shearing or Moulding of the Fœtal Head, in its Medico-Legal Aspects.* By W. J. SIMPSON, M.D., Aberdeen.

SHEARING or moulding of the head of the newly-born child is a subject which has only of late years been carefully investigated, and has not yet been applied to medicine further than helping the obstetrician to gain some valuable hints in regard to deformed pelvises. It will therefore be useful briefly to draw attention to the fact that shearing can also be applied by the medical jurist to help him in certain cases.

It is unnecessary to enter into all the details of moulding. A few plates taken from Budin's monograph will sufficiently illustrate the substance of my remarks.

The ordinary character of the fœtal head while in the uterus, as ascertained by Cæsarean section and quick podalic delivery, is known to be ovoid (Plate I., Figs. 1 and 3), the two sides to be perfectly symmetrical (Plate I., Fig. 2), and the contour or outline of the head to be quite even. As a rule, in breech presentations, the head being a very short time in the pelvis, and hence not subjected to any lengthened pressure, the form changes very little, if at all, from