examination and inquiry, I found to be that of the early cabbage, which had then come into season ; and, as there were no potatoes at that time, had, together with bacon, constituted the principal part of the patient's food for several days previously. Not the slightest trace of bile was apparent in the entire mass ; nor, in fact, was there anything which I could detect, besides the vegetable matter alluded to, and the mucus, which formed the cementing medium. Denman, under the appellation of *ball-stools*, described bodies similar as to form and size, but totally differing in composition, and points out the necessity of removing them by raking, as they cause extraordinary action of the intestines, and pain, periodical in its returns, and violent in a degree. In the present case, as the strongest purgatives and repeated injections had failed to give to the peristaltic action of the bowels a sufficient stimulus for their expulsion, it is manifest that if mechanical relief had not been afforded, or had been too long delayed, a dangerous and perhaps fatal attack of inflammation must have followed. The ball-stool, according to Denman, if proper and timely means are not used, sometimes proves fatal, by bringing on a sphacelation of the parts.

Strangford, Ireland, August 1850.

CASE OF COMPLETE PARALYSIS OF THE MOTOR OCULI OF THE LEFT SIDE ;

DEPENDENT UPON ANEURISM OF THE LEFT POSTERIOR
COMMUNICATING ARTERY.

BY CHARLES J. HARE, M.D. Cantab. ; Licentiate of the Royal College of Physicians, Assistant-Physician to University College Hospital.

ANEURISMS of the cerebral arteries are of sufficiently rare occurrence to make a record of the symptoms to which they have given rise, and of the pathological appearances accompanying them, both desirable and interesting ; and as, in the case which has recently fallen under my notice, the peculiar position of the Aneurism gave rise to some phenomena during life, and to some circumstances in the mode of death, which, together, tended to throw light on the diagnosis of the particular lesion present, I have thought that the following details might not be unacceptable.

CASE. Rosa H., æt. 18, unmarried, first came under my care as an out-patient at University College Hospital, April 18, 1850. By occupation a milliner, working principally at a house of business, and consequently much confined in-doors ; hours late, especially during the London season, when, often, she did not get home till from 9 to 11 o'clock at night : a skilful and industrious worker ; of regular habits ; had sufficient food and clothing. For some time past—about a couple of years—she had resided with her mother in their present lodgings, a front room, second floor, in an apparently healthy situation ; the room is of moderate size, airy, not damp. Stature shortish ; moderately stout ; conformation good ; complexion rather pale ; hair dark brown ; pupils

hazel; habitual state of mind said to be, both by herself and friends, very cheerful and hopeful, but her temper naturally hasty and passionate. Her cast of countenance, however, did not, when I saw her, indicate a cheerful disposition. Her father died of "decline" (had bad cough, etc.), after an illness of seven years: her mother, for two years before, had at times been under the care of a physician-accoucheur for some "internal" (probably uterine) disease. Had five sisters and one brother, none of them strong, though none absolutely ill; several of the sisters, one especially, are subject to headaches; two of them, whom I saw, were anæmic. Her mother had lost six other children, but none of them, so far as was known, from cerebral disease. The patient had usually enjoyed pretty good health, and had not been laid up with any disease or illness which she could remember, till the end of June 1848, when she was attacked with "brain fever." She stated that the attack commenced suddenly with pain over the whole head, very severe, so as to make her scream. From her mother's account, it appeared that she was not confined to bed during the first week of her illness, that is, while she remained at home. She was, however, excited in her manner; much excited by any little event in-doors, or by what was passing in the street; was violent, destroyed various articles, wasted much food, while, at the same time, she eat voraciously; she complained much of coldness of the feet and legs, and, to ease this sensation, attempted to, and actually did, pour some boiling water over them. After having been thus ill at home a week, a certificate, which I saw, and which stated "that she was not fit to be left where she could not properly be watched and attended to, as she required restraint for the present", was written by Mr. Collins, who attended her, in order to procure her admission into the St. Pancras' Infirmary. She was placed under restraint while in the Infirmary, and remained there altogether two months; but it was fully three months from the commencement of her illness before she was able to get about; and for several months she was not able to work. For some time after her admission into the Infirmary, it appears that she was delirious, and for nearly a month or quite that time she was unable to recognise individuals around her. Her head was shaved once, and a lotion was applied to it; she had two blisters to the back of the neck (kept open), but was neither bled, cupped, nor leeches; she did not remember that her gums were made sore. No cause for the attack is known. When she recovered, she worked at millinery, as already stated.

She had never been so well after this attack as before, though she had not since suffered from any serious illness, up to the time of the attack for which she sought advice at the hospital. As regards her disposition, she was naturally a proud girl, and in temper was hasty and passionate; her *temper* improved after her illness, (that is, she was less passionate), but she became more "spiteful" from any trifling cause, than previously. There was also this peculiarity—that she would sometimes play with children *as a child*, not as a girl of her years; so that her sister has remarked to her, "Well, I think you can't be right in your mind." Formerly she was never subject to headaches, but since her illness had been much troubled with them, especially across the forehead, sometimes at the vertex, less frequently about the occiput; the pain being heavy and very severe. These attacks became more and

more frequent, besides being more severe : at first she would be a fortnight free from them, but more recently, and especially within the six months before I saw her, they had been much more frequent, so that she had not been a day free from them. Occasionally she had vertigo ; and she stated, that about a month or a little more, previously to my seeing her, on returning home from her work, about 11 P.M., (after a hard day's work at sewing), she would have fallen in consequence, had she not been with a young friend who supported her ; she was, at the time, very pale. Since her illness also, when she was at home during the daytime, or when she returned home from her work in the evening, she often used to lie down, owing to headache. One of her sisters, who slept with her last summer, stated (without the question being put) that she then always preferred lying with her head *high*, and that she was a light sleeper, easily disturbed. Her mother however said, that of late, when she lay down during the daytime, she evidently preferred having the head rather low. She never had any fit, nor loss of consciousness, nor paralysis of any part, nor numbness or tingling in the arms or legs.

On Thursday, March 28th, she was at work, and felt as well as usual. On Friday, the 29th, she continued at work, and did not remark anything unusual till the evening, when she found that the sight of the left eye became dim, as if there were a mist before it ; there was, however, no double vision, nor has there been any since. At the same time, the left upper eyelid became partially closed, but not entirely so ; this was noticed at the time by her fellow work-people, and mentioned to her. I understood her to say also, that the eyelid became entirely closed at a later period of *that* evening, and continued so ; but on this point I am not quite certain.

During the ensuing week she continued at her work, notwithstanding the complete ptosis of the left side, for which, however, she did nothing, with the exception of applying some lotion without benefit. On the Friday or Saturday following, (April 5th or 6th), she came to University College Hospital without a letter of recommendation, but saw the resident medical officer, Mr. Clover, who ordered her to apply three leeches to the left temple ; they were not put on, however, till the Saturday evening, (April 6th), and only two of them took. Next day (Sunday) morning, the eyelid was *partially open*, but it again closed entirely in the evening, and *never opened again* up to the time when I saw her. On that Sunday she vomited two or three times, and afterwards also, (before I saw her) ; but no notice of the circumstance was taken, as she had previously been subject to sickness occasionally, when she had the headaches. *Before* her illness in 1848, and indeed when a child, she not unfrequently vomited, which was often ascribed to her eating much sweets, of which she was particularly fond.

On Saturday, April 13th, she again applied at University College Hospital, and was ordered a saline mixture, with two doses of *pilula rhei cum hydrargyro*, which were again repeated on the 25th. It was on Thursday, April 18th, that I first saw her, and finding the case to be an interesting one, and serious also in its nature, I asked her to come the following day, that I might take more accurate notes than I then could, when occupied in seeing the out-patients generally. The following notes therefore refer to her state on Friday, April 19th.

There was nothing unusual in her attitude, but she had the appearance of a person somewhat languid and fatigued; the expression of her countenance was rather heavy; her temper had not altered of late, but her spirits were decidedly worse than usual; her mother, however, afterwards told me that they even then still continued good. She slept very indifferently, the sleep being often interrupted by headache; and she said that she often did not get an hour's rest all night in consequence; she did not dream; was not so strong as formerly; suffered from much lassitude. Colour of skin generally pale; moderate amount of fat; no anasarca.

The eyebrows were equally arched, and of equal height. There was *complete* ptosis of the left upper eyelid; by no effort of the will could she open it in the least. When she voluntarily closed the right eye, the left eye appeared the more prominent, in consequence of slight œdema of the left upper eyelid. It was doubtful whether the left eye-ball were more prominent than the right. The left upper eyelid was a little redder—deeper flesh-coloured—than right. There was some epiphora of left eye; no redness of conjunctiva. When the left eyelid was raised, the eyeball was seen to be everted to the left side (outwards); so that when the right eye was directed exactly forwards, the axis of the left pointed outwards at an angle of 60° . She was unable to move the left eyeball in the least, either upwards, downwards, or inwards, but could turn it quite readily to the outer angle of the eye; it was therefore only when the right eye was moved to its inner angle, that the axes of the two eyes were in the same direction: by the greatest effort she could not direct the axis of the left eye forwards—it still looked outwards. By noting the position of any given mark on the iris, the following phenomena were observed. When she was told to look *downwards*, the right eyeball obeyed, of course, the will; the axis of the left eye, however, did not in the least alter its direction, but the eyeball was nevertheless *rotated* on its own axis, to the amount of about one-sixteenth of an inch, in such a direction that its outer part became more superior, and its superior more inward; its motion therefore being outwards, upwards, and inwards, (owing to the action of the superior oblique muscle). No motion however in the opposite direction took place, when she attempted to look upwards (owing to paralysis of the inferior oblique); but the left eye remained perfectly motionless, while the right one obeyed volition. The right iris acted well under the stimulus of light; the outer part of the iris was, however, observed to be *rather* broader than its inner part. The *left* iris did not act at all, either under the stimulus of light, or consensually with the motions of the other eye: the pupil was considerably dilated, but unequally so, the iris being considerably narrower at its upper and inner angle, than at the rest of the circumference, where its width was uniform, though considerably less than that of the right iris; the left pupil therefore was uniformly nearly two-thirds more in diameter than the right one, with the exception of that diameter from its upper and inner to its outer and lower angle, where it was nearly double that of the right pupil. She complained of having considerable pain in the left eyelid of an aching character, and sometimes of shooting pain in it.

I observed no derangement of intellect; she answered all my questions quite accurately, so far as could be judged. There was no paralysis of

any part, beyond what has been already stated; nor was there any derangement or perversion of any of the senses, except a rather considerable dimness of vision in the left eye, so that she saw objects very indistinctly when the right eye was closed. Her appetite was indifferent, and had been so for three weeks before. She had never been subject to any cough, even on taking cold; had a good and powerful voice for singing, and could sustain her notes for a considerable time. The catamenia were usually quite regular and sufficient; her mother subsequently told me, that when the leeches were applied on the 6th of April, the catamenia were present, but stopped rather suddenly afterwards. Four leeches were ordered to be applied to the left temple.

It would appear, from some erroneous statements which she made after she returned home on that day, that she must then have wandered somewhat in her mind, at least for a while; but otherwise, her manners did not seem different from usual, with the exception of her being rather impetuous while the leeches (of which three took) were being applied. Her mother stated, too, that she looked paler, and that her features appeared "drawn". The headache, of which she complained, continued, not being relieved by the leeches. Frequently after the ptosis took place, she had requested her mother, in order to relieve the headaches, to tie her head as tightly round as possible with a handkerchief, and sometimes she wished this to be done as often as three or four times a day. The last time her mother did this for her, was on the Thursday evening.

On the Friday night she did not take anything likely to disagree with her; she had no beer for supper. On the Saturday morning, she was up at 6 a. m., to make some breakfast for herself and her sister (who was going to her work), but she afterwards went to bed again. During the forenoon, she did not complain of anything unusual. About 1 o'clock, she was lying on the bed, and had been speaking to her mother within two or three minutes, when her mother, happening to look towards her, saw her head drop. Her face and neck became very red, and "*the left eye was as wide open as the other, and continued so*". Mr. Welch, surgeon, who lived near, was called to see her, and immediately attended; and he has assured me that the eye was quite open when he saw the patient,—thus confirming the statement of the mother. The attack was unaccompanied by any scream or struggling; there was only a slight twisting of the left hand and of the head; the lower limbs are said not to have moved at all. Her face then turned deathly, and she died within ten or fifteen minutes from the commencement of the attack.

POST-MORTEM EXAMINATION, APRIL 23, SEVENTY-FIVE HOURS AFTER DEATH. Weather moderately dry; average temperature of preceding three days 47°; but the body had been kept in a room in which the family partially lived, during that time.

Rigor mortis continued in all the limbs, upper and lower, perhaps slightly more, however, in the legs than in the arms. When I first saw the body, about two hours after death, the upper extremities were supple, but rigor mortis was very distinct in the legs—in both equally.

A well formed body, rather large chest for size of person: no emaciation: fat under integuments from half to five-eighths of an inch in thickness; color of skin pale; cutaneous veins not unusually marked;

some purple discoloration at posterior part of body; no apparent decomposition had commenced; no cedema; color of muscles darkish.

Neither eye was completely closed; one eyeball was not more prominent than the other; the left pupil was very slightly more dilated than the right one; neither of them was more dilated than natural.

Chest. The lungs were perfectly healthy; not a single tubercle was discovered; no unusual redness of bronchial mucous membrane. The heart was of apparently natural size and weight; the right side contained dark coagula; no disease of valves; no disease of the aorta, nor any atheromatous deposit in its coats.

Abdomen. Stomach natural in position, shape and size: it contained fully six or seven ounces of a thickish fluid, like gruel or arrowroot; its mucous membrane was of an ash grey colour and very much softened, but there were no ulcers. Intestines not opened throughout; where opened, they presented nothing anormal. Spleen of very dark colour; surface a little corrugated. Liver of natural size; general color dark purplish; on closer examination it presented tolerably well marked hepatic congestion. There were no traces of inflammation or other disease of the peritoneum.

Both kidneys were of a dark reddish purple colour throughout their whole substance; cortical and tubular portions equally so; no granular appearance; the capsule came off without tearing the substance. Uterus of usual size, and apparently of natural consistence. One ovary (I think both ovaries) contained two or three small cysts filled with a serous looking fluid. One of them contained a false corpus luteum.

Brain. The vessels of the dura mater were large; some dark fluid blood escaped from the torn vessels. The dura mater itself was very opaque, and its surface presented a somewhat opalescent appearance; the small vessels were minutely injected. No enlargement of the Pacchionian bodies. There was no opacity of the arachnoid covering the superior parts of the hemispheres. Both the small and large vessels of the pia mater were congested, as well over the anterior as over the posterior part of hemispheres. The general appearance of the brain, as seen *in situ*, was of a pinkish cream colour, owing to this congestion of the pia mater; but scattered over the surface of the hemispheres—more over the right than left, and more along their borders than elsewhere—were patches of a deep red colour, varying in size from a pea to that of a shilling, or still larger, and produced by a more considerable injection of the small vessels of the pia mater than existed over the surface generally. Over the convolutions situated in the longitudinal fissure between the hemispheres, these red patches were still more abundant and redder, than over the superior cranial aspect. There was very considerable congestion of the whole of the pia mater at the base of the brain, and there were also patches of redness similar to the above, but much larger; while, along the posterior half of each anterior lobe, the pia mater was of one uniform deep red colour.

At the base of the brain, *under* the arachnoid, there was a considerable clot of blood, most abundant from the commissure of the optic nerves, backwards over the pons Varolii, and on each side of the medulla oblongata; the clot also completely filled up the fourth ventricle, so as to separate the medulla from contact with the cerebellum by a distance

of half an inch; the clot in the fourth ventricle was of a dark purplish black colour, and of the consistence of jelly, and, from its position, must have caused considerable pressure on the respiratory tract. In each lateral ventricle, there was a little bloody serum, with a very small quantity of darkish coagulum in one of them; the septum between the lateral ventricles was broken down. The substance of the brain, and especially of the corpora striata and optic thalami, was somewhat softer than natural; but there was no clot in any part of the substance of the brain itself.

Near the anterior extremity of the left posterior communicating artery, and at a short distance from its junction with the carotid, that vessel (the posterior communicating artery) became suddenly dilated into an aneurismal and somewhat egg-shaped sac, about six-tenths of an inch in length, and four-tenths of an inch in its transverse diameter, its long axis being in the direction of the vessel. It was partially filled with dark-coloured softish coagula; air could be blown into it both from the basilar artery, and from the left carotid; at its cerebral aspect, there was a small fissure in it, from which the blood had probably escaped.

The right third nerve presented a perfectly natural appearance; but the *left* one, where it crossed under the posterior communicating artery, just at the point of aneurismal dilatation, had been so pressed upon by the aneurism as to have become almost completely atrophied, the remaining fibres of it being seen to be spread out upon and in a manner incorporated with the walls of the aneurism. Beyond this part, the nerve reassumed its natural appearance. The aneurism likewise pressed, by its right border and superior surface, upon the left optic nerve, a little posterior to the commissure.

Portions of the internal carotid and of the basilar arteries were examined under the microscope; both these vessels were free from fatty degeneration, and there was no atheromatous deposit in either; in one of them, two or three small scales of cholesterine were detected. The arachnoid covering was considerably thickened, and more opaque than natural.

REMARKS. The most remarkable feature presented by the case, when I first examined the patient, was the complete paralysis of every part supplied by the left motor oculi, while the functions of the other nerves appeared altogether or almost altogether unimpaired. She had not the slightest power of raising the left eyelid; the paralysis of the superior, internal, and inferior recti of the same side was shown by the utter motionlessness of the eye when she endeavoured to move it upwards, inwards, or downwards; there was an entire absence of that rotation of the eye which is produced by the action of the inferior oblique; while the iris, being likewise supplied by filaments from the third nerve, was dilated and immoveable. On the other hand, the external rectus (supplied by the sixth nerve), and the superior oblique (by the fourth), continued to perform their duties; the action of the former, not being counteracted by that of the internal rectus, caused a permanent outward squinting of the eye, while the rotation described in the notes of the case showed the persistence of the functions of the latter. The functions of the fifth and seventh nerves appeared likewise to be unimpaired. Accom-

panying the paralysis of motion, however, there was a decided impairment of vision of the left eye, which might depend either upon the dilatation of the pupil, or upon some affection of the optic nerve, or partially upon each of these causes. The amount of dimness of sight was, however, such as to lead me to suppose that the optic nerve was, to a slight extent, probably involved by the same cause which gave rise to the paralysis of the third. With reference to the condition of her sight, it is worthy of remark that there was not, when I saw the patient, nor had there at any time been, even when the attack first came on, any double-sight—which is a symptom often accompanying paralysis of the motor oculi.

From a consideration of the symptoms which presented themselves, it appeared probable, that the lesion of the third nerve existed posteriorly to its point of division into two branches within the orbit; for had the cause existed within the orbit, one branch might have retained its functions while the other was implicated;—ptosis, for example, might have existed without paralysis of the internal or inferior rectus or dilatation of the pupil; while, if a tumour had existed there, so as to have pressed upon both branches of the nerve, it would, probably, likewise have caused some protrusion of the eyeball, or would have involved also the fourth or sixth nerve. Again, as, in the cavernous sinus, the motor oculi is in such close relationship with the fourth, the ophthalmic division of the fifth, and the sixth nerves, had the paralysis depended upon a growth, or other disease, within that part, it is very likely that in this case too, some one or other of the neighbouring nerves would also have been involved. On the whole, therefore, the probability was that the disease was situated between the cavernous sinus and the crura cerebri, or within the latter.

The history of the patient, in conjunction with her present attack, seemed clearly to point to a chronic cerebral affection of some standing. Two years previously, she had suffered from an attack termed at the time, "Brain-fever", and during which she certainly was so delirious as to require some restraint; since then, her health had been worse than before, a change in her disposition had taken place, and in her manners she was more childish than formerly. She had also been subject to gradually increasing headaches, from which, for six months before her death, she had scarcely been a day free; and vertigo was another of her symptoms. All these tended to make the prognosis, which, in complete paralysis of the third nerve, is generally unfavourable, peculiarly so in this case; but they were not sufficient to point out the exact nature of the lesion.

One of the most remarkable circumstances which occurred in the course of this case, was connected with the mode of death. From the time when the ptosis first came on, up to the period of the fatal apoplectic seizure, the paralysis had been constant, with the exception of the day after the first application of the leeches to the temple, when she was enabled partially to open the eye, though the symptoms soon after returned as before. Immediately, however, that the apoplectic stroke occurred, the left eye was observed to be quite open, and the squinting ceased; nor did Mr. Welch, who was immediately called in, and who remained with her till she died, observe any notable difference in the appearance of

the two eyes, so that the pupil must have regained its contractility at the same time. These circumstances, together with the previous history of the patient, the symptoms she presented, and the temporary relief afforded by the abstraction of blood, led me to conclude that the paralysis had most probably been caused by the pressure of an aneurism upon the third nerve, and that its rupture had simultaneously produced the apoplexy, and, by diminishing the bulk of the aneurismal tumour itself, had allowed the nerve to reassume its function. The post-mortem examination, in which I was kindly assisted by my friends Dr. Jenner and Mr. Welch, confirmed the opinion I had expressed; for we found an aneurism of the left posterior communicating artery, fully half an inch in length, very considerably compressing the motor oculi of that side, without apparently implicating any other part except by pressing slightly upon the optic nerve, just posteriorly to the commissure. In a case of paralysis of the third nerves, recorded by Mr. Brown in the *Dublin Quarterly Journal* for May, 1849, in which both pupils were dilated, though unequally so, they remained after death as fully dilated as during life. This, indeed, is the rule in such cases; but, in the present instance, the difference in the size of the two pupils, which before had been so great, was scarcely perceptible, owing to the cause of the paralysis having been removed just prior to the patient's death. Amongst the post-mortem examinations which I have made, or at which I have been present, the only instance of aneurism of the cerebral vessels which I have met with was in a man, aged 49, who died in University College Hospital under the care of the late Dr. A. T. Thomson, and who, previous to admission, had had a fit, accompanied by paralysis of the left side and dilatation of the right pupil. He survived a fortnight; and, after death, the anterior lobe was found much softened, there being also a slight effusion of blood into one part of it; the basilar artery was opaque, hardish from bony deposit, and distended with blood; there was an aneurism of the right middle cerebral artery, just where it lies in the fissure of Sylvius, about the size (or nearly so) of a nutmeg, with one or two smaller aneurisms of the same artery; the left middle cerebral artery also formed an aneurism, not globular like the other, but consisting rather of a general dilatation of the vessel (to the thickness of an ordinary quill), and extending from near its commencement to its great curve, that is, for about the length of an inch; from this some enlarged branches proceeded into the substance of the brain. The coats of the cerebral vessels were, in this case, very much diseased, and there was also ossific deposit in the arch of the aorta, and in other arteries; but in the case of Rosa H., not only were the aorta and larger vessels healthy, but there was neither any ossific nor atheromatous deposit in the cerebral arteries, nor did they show any traces of fatty degeneration, so that the formation of an aneurism was the more remarkable.

The post-mortem examination also fully accounted for the very rapidly fatal termination of the apoplectic attack; for the blood was so effused at the base of the brain, and the quantity in the fourth ventricle was so considerable, that it must necessarily have caused very great pressure upon the respiratory tract.

9, Langham Place, August, 1850.