completely to admit one finger. I must, however, join with Professor Braun, of Vienna, in his condemnation of forcible delivery when the os is in a rigid undilatable condition. On this subject, he remarks:—"When artificial delivery (*accouchement forcé*) is attempted by introducing the hand in a conical form through a narrow os uteri, and when the cervix is narrow or very little dilated, it is generally found to be altogether impossible, or it sometimes leads to uterine ruptures dangerous to life; and thus the mother is subjected to greater dangers from the operation than from the eclampsia itself, of which no one can say whether any more paroxysms may come on and cause death" (Braun on *Puerperal Convulsions*, translated by Dr. Matthews Duncan).

EMBOLISM OF RIGHT MIDDLE CEREBRAL ARTERY: WARTY GROWTHS IN THE LEFT AURICLE AND ON THE MITRAL VALVE.*

By HENRY E. ARMSTRONG, M.R.C.S., Newcastle-on-Tyne.

As the *post mortem* examination of this case revealed the conditions which form the text of the following paper, the symptoms may be divided into three sets; viz., those previous to the detachment of the fibrinous growth; those which accompanied its passage and marked a temporary impediment to its course along the vessels of the brain, as the pulsations drove it slowly onward; and, finally, those which supervened after the total arrest of its progress when the balance of the circulation was in some degree restored, and which continued till death.

M. D., a slender girl, aged 14, with none of the signs of puberty, had been ill four years. Her complaint was said to have begun with slight swelling of the feet and legs, followed by numbness of the right side. These symptoms, however, after a time disappeared entirely. She had been under treatment for palpitation, dyspnoea, etc., at various public institutions here and in Edinburgh, and understood that she had disease of the heart.

I was called to the case on February 15th, 1872, when I found the patient comatose after a succession of epileptiform convulsions, which had come on during the morning, from the exertion of ascending several pairs of stairs to the tenement occupied by her family. A loud cooing systolic *bruit* was audible over the entire chest, and (less distinctly) down the abdominal aorta; by its continuance it seemed to drown the second sound of the heart. The pulse was 112, regular, and of equal volume at the two wrists.

Early next day the patient roused up, and soon began to chatter incessantly. She complained of her head, especially near the right temple, which she said was fit to "open." She had left hemiplegia—sensation and motion being completely lost in the upper limb; motion entirely, sensation in great measure in the lower. The pulse was 120. The patient was occasionally sick. She had a chloral draught, and slumbered at times; but, so long as she was awake, she continued to talk volubly. On my visit in the evening of the same day, the mother volunteered statements that the patient had that day used words "such as she never used before." She had called her relatives strange names, made unusual demands, and frequently struck out and kicked with the right hand and foot. Although at all times previously to the present seizure, the patient was, to my knowledge, of a retiring and modest disposition, she had now become bold and slightly erotic in her remarks, even to myself. In the intervals of her chattering she would lapse into unconsciousness, which lasted a few minutes.

I was told that during some of the comatose periods her face had been distorted as though by pain; but all such appearances had passed off at the time in question, and her general aspect was placid, and her pupils normal. She had vomited all food.

Next day she was more rational, but at times semicomatose. She then vomited matters of a grass green colour. On the day following consciousness seemed completely restored, and the expression, though languid, was more natural. The heart beat with more force; and the second sound was once more audible.

A day or two after this (on February 22nd), the sound side began to jerk spasmodically. The vomiting continued urgent for about a week, the stomach rejecting all food, though the patient had become almost ravenous. To relieve the insomnia from which she suffered, thirty grains of hydrate of chloral in solution were injected *per rectum*, but were not retained. Sleep was afterwards procured by solution of morphia taken into the stomach.

On March 1st, the paralysis was unaltered, but the patient had re-

gained her usual mental condition, and was once more the quiet shy girl whom I had known before the attack.

On the morning of March 7th, she spat up a little blood and complained of frontal headache. At night, she was for over three hours violently convulsed on the right side, after which she became semicomatose for a time. On the return of consciousness, vocal articulation, which had hitherto been intact, was observed to be somewhat impaired. The patient was rational. She complained of a choking sensation, and occasionally spat up blood or bloody mucus. At this stage I noted that the first sound of the heart had become rougher, and that the second sound seemed more distinct, from which I at the time inferred a further detachment of the valvular vegetations.

After this, the patient slowly improved, and in about three weeks had regained some power over her limbs—the upper first, so that when raised in bed she could move the elbow of the palsied arm away from the side, and by jerking the shoulder could bring it forward. The forearm and hand were still paralysed. When lying supine, she could raise the lower limb from the bed and flex the leg.

Speech and reason had now become normal, the vomiting and hæmoptysis had entirely ceased, and the scapular, humeral, and pectoral muscles were gradually reacquiring force. By the latter end of April the patient was able to use the forearm a little, and could even walk without assistance. Tarsal ophthalmia of the right side was now observed, but there was no ptosis.

By the beginning of June she was not quite so well; and on the 11th she had become dropsical, with symptoms of uræmia, from which she died on the 13th, about four months after the first appearance of signs of embolism.

Secio cadaveris, thirty hours after death. The body was small for age, anasarous, and discoloured on the surface. The dura mater was tense; the meningeal vessels and cerebral sinuses were full. The cerebral substance was of a dark greenish grey colour on the surface. The convolutions were flattened. The brain was somewhat soft and not easily removed entire. The medullary substance was slightly yellow in hue, with "moist lustre of cut surface," indicating oedema; there were few or no *puncta vasculosa*. The vessels at the base were loaded. On tracing the right middle cerebral artery along the Sylvian fissure and following up one of its divisions to the back of the anterior lobe, a white plug, about the size of two or three large pins' heads, was distinctly visible through the thin transparent wall of the (up to this point) distended vessel. The plug felt hard between the finger and thumb. No other abnormal appearance was noted in connexion with the brain. The heart weighed above eight ounces and a half, a rather heavy weight for the size of the girl. The lower and left walls of the left auricle were closely studded with short, easily detached fibrinous prolongations, forming a well-defined rough surface down to the free margin of the posterior segment of the mitral valve. Wartlike growths hung down into the ventricle from the margins of the valve, the largest (which was afterwards accidentally detached) being of the size of a split pea. The left ventricle was dilated; and its walls were hypertrophied. The right ventricle was small in comparison with the left, otherwise normal.

REMARKS.—During the progress of this case, certain of the symptoms led to the supposition that the detachment of fibrin from the heart was repeated. These were the clonic spasm of the right limbs, followed by semicomatose, and afterwards impairment of articulation, on the 7th of March. At that time the actual roughness of the endocardium or the quantity of warts was not even guessed at; and, when auscultation after a recurrence of the more acute symptoms of embolism revealed an alteration in the mitral systolic sound, the diagnosis of further detachment of warts from those valves was not altogether without foundation. The *post mortem* examination, however, showed the probable fallacy of this diagnosis, since there was found but one morsel of fibrin found in the vessels of the brain, and several remained adherent to the mitral valve; had there been others in the brain, the thinness and transparency of the vascular coats at the seat of plugging, and the distension elsewhere, would readily have shown any but the minutest solid foreign body within the vessels. The inference, therefore, is that the first attack of convulsion was caused by the passage of the wart as it was slowly carried through perhaps the first portion of the middle cerebral artery by the more rapidly travelling stream of blood which, from the presence of the foreign body, found its way with difficulty to the parts supplied by the branches of the vessel; that, reaching a bifurcation, the embolon for a time obstructed the current through one or both branches, causing anæmia of the brain beyond and coma, which passed off as the circulation became re-established collaterally by the circle of Willis; and that, as the heart's action began to increase in vigour (*i.e.*, about a fortnight after the coma) the obstructed vessel (which, from previous want of blood, etc., had suffered in tone more than those of other parts of the body) yielded, and allowed

* Read before the Northumberland and Durham Medical Society.

the plug to be pushed by the blood a little further to the next bifurcation of the artery, at which time the second series of milder clonic spasms, followed by semicoma, occurred. The gravity of the symptoms in each attack of convulsions and stupor would be proportionate to the calibre of the vessel through which the embolus was passing at the time, and the relative amount of brain deprived of blood by its occlusion. One peculiarity of the case is that, not only was there no aphasia (apparently proving the absence of any embolus in the left middle cerebral artery), but at one time quite the reverse. Shortly after the first coma, the patient's intellect was active, and her vocabulary preternaturally copious for the expression of thoughts which her tongue was glib to utter. After the second coma, however, the mechanism of speech was for a short time deranged. The œdema of the brain noticed at the necropsy might be *post mortem*, or part of the general anasarca. If the latter, to what extent would it influence the anæmia of the cerebral substance during life?

Treatment could be only palliative, and consisted in quiet, with an occasional hypnotic, or sedative draught; a course to which the parents, on an explanation of the nature of the case, readily acceded.

TWO CASES OF ANIMAL POISONING.*

By JOSEPH HINTON, M.R.C.S., Warminster.

THE cases which I propose to relate may prove interesting, as forming illustrations of the modes by which the human frame may be the receptacle of an animal poison, whilst they also serve to show the danger, sufficiently well known to most of us.

CASE I.—Mrs. C., a stout florid woman, aged about 40, of sedentary habits, was first seen by me on September 16th, 1871. She gave this history. On August 24th, she was bitten between the third and fourth metacarpal bones of the left hand by a rat. She paid but slight attention to it, and in a few days the traces of the accident had almost disappeared. Two or three days before my visit, she felt the hand uncomfortable, and there was some degree of general *malaise*. I found the two smaller fingers puffed, some swelling and redness on both surfaces of the hand, at the heads of the two metacarpal bones, with faint lines of redness extending up the arm; no great discomfort in the axilla. On the dorsal surface there was an indistinct feeling of fluctuation; but on pressure there was but slight tenderness. Her general condition was unpromising; her countenance was anxious; she was feverish, and appetite had left her; the tongue was particularly foul, and the bowels were costive. I ordered her to rest the arm absolutely in a sling, and painted the parts with tincture of iodine, giving her a brisk aperient and some saline. On the following day she was greatly improved; the bowels had acted freely, and the local affection was much less painful. On the 19th, she had a sharp attack of sore-throat and a return of feverish symptoms. Chlorate of potash mixture and the use of a gargle relieved this, and the following day she appeared decidedly better. I prescribed some quinine, and, as she slept indifferently, some chloral at night. For a few days progress was unchecked, but about the 27th the local condition again became more urgent; the palmar surface was now decidedly the more swollen; for several days this continued, till there was a very doubtful appearance of suppuration. This increased, but, just as the propriety of opening became a matter of daily consideration, the swelling subsided, and the local ailment was never again troublesome, though occasionally the parts itched. About this time red blotches, varying in size from a sixpence to half-a-crown, gradually appeared over the body; several round each eye. These were tolerably defined in margin, slightly raised, giving a sensation of hardness. On pressure, the redness did not quite disappear. These spots remained more or less visible for four or five weeks, but disappeared before the fatal issue; they never suppurated or altered in character. With the accession of these spots, the tongue became preternaturally clean and sore, and the vital powers began to give way. Nausea was constant, and in a few days vomiting became incessant. For this latter symptom, the Pharmacopœia yielded up one by one all its vaunted treasures, each for the first day or two of trial appearing useful. Suffice it to say that she was given on October 1st, bismuth with prussic acid; October 4th, bromide of potassium; October 9th, quinine, with mixed acids and prussic acid; October 12th, effervescing mixture, with prussic acid; October 15th, effervescing mixture, with lemon-juice; October 18th, mixed acids; October 22nd, oxalate of cerium, and a blister to the epigastric region; October 29th, oxide of silver; October 31st, creasote mixture; and November 10th, sulphurous acid. Creasote, certainly, was the most beneficial. On

October 18th, she was seen by Dr. Falconer in consultation; and, at his suggestion, the mixed acids were again tried. When vomiting had thoroughly set in, the matters vomited were always of a dark sap green colour; and very rarely did she have twelve hours' freedom. On October 31st the throat again became very sore, the tongue glazed and dry, deglutition difficult, the pulse very flickering, and her general condition so bad that for thirty-six hours death appeared imminent. I then ordered five grains of quinine and half an ounce of brandy, with opium, to be given every four hours by injection. She rallied, and from this date to that of her death, on the 11th November, she was kept alive chiefly by these means. I have said that creasote was decidedly the most successful in allaying the distressing vomiting; and, after she had taken it two days, there seemed just the hope that she would yet weather the storm. She took several meals of bread and milk, small pieces of partridge, etc., and appeared to enjoy it; but this only lasted four-and-twenty hours; the vomiting again returned; she sank into a semi-conscious state, and died on November 11th, very nearly three months after the occurrence of the accident.

My patient lived in the heart of our little town; she was bitten in the cellar, and no doubt the rat was a sewer-rat, and might probably have been just feeding on some decomposing animal matter. The rat-catchers who kill them in the ricks never scruple to lay hold of them, and are often severely bitten, so far as I have seen without any ill effects; but then it must be recollected that the rats are in these instances gaminivorous. My partner Mr. Bleack saw in consultation a case of rat-bite under the care of my friend Mr. Grubb. This case was near the town, and the man's life was in great jeopardy for several weeks. Since the fatal issue of my case, I have often considered that my patient's position might have been better had I opened the dorsal aspect of the hand at first. Any way, the case has so far impressed me with the gravity of such an accident, that I should in a similar case recommend (if seen at the onset) excision of the wound and caustic; and, supposing the time for this to have passed, I should open any suspicious swelling at the seat of injury.

CASE II.—Mrs. D., aged about 27, a very small and decidedly weakly woman, sent for me hurriedly two years since. A second messenger met me. I found my patient blanched, cold, and almost pulseless—her tongue and breath being also cold, giving me the appearance of a case of cholera collapse. She could only speak slowly, and in a whisper; but by degrees she gave me this explanation of her condition. She was perfectly well, engaged in her domestic duties, when she begged her servant to bring her a certain saucepan. In this identical saucepan, some six weeks previously, mackerel had been cooked. The servant believed her saucepan to be clean. The mistress took off the cover to examine, and was immediately regaled by the most horrible stench, which very nearly knocked my patient down literally. She was immediately very sick and faint, very soon had a great desire to relieve the bowels, and for this purpose went up into the garden. She remained there longer than appeared necessary. She was sought for, and was found there, cold, blanched, and as feeble as possible, looking more dead than alive. She was carried up stairs, and, as I have said, was able to tell me this in a low whisper. She further said that the bowels had acted most copiously in the privy, and that even since she had been in bed the slightest movement brought on a very loose action. No flooding of any kind occurred. By the aid of stimulants and other appropriate measures, she soon rallied from this alarming condition.

Now here, I take it, we have another form of animal poisoning, in which the nasal membranes formed the door of admission; and, though the matter appears trifling enough, the result placed a life in peril for several hours. I have said she was a small woman, but she is particularly so, and is also of feeble powers; still, I have attended her in three confinements, which she has borne pluckily and well, and her powers of endurance are greater than her appearance would indicate; but I have never seen her so utterly prostrated as on this occasion.

THERAPEUTIC MEMORANDA.

CONVULSIONS TREATED BY CHLOROFORM.

IN confirmation of the experience of Mr. Mowatt, recorded in the JOURNAL of May 31st, I may mention that some years ago, in a severe case of convulsions in a child aged seven months, I tried the chloroform treatment; and, finding it beneficial, have continued it to the present time with the best and most successful results. I only use the warm bath, etc., where I dare not treat with chloroform. When I am called to a case of convulsions, the first thing I do is to administer chloroform,

* Read before the Bath and Bristol Branch.