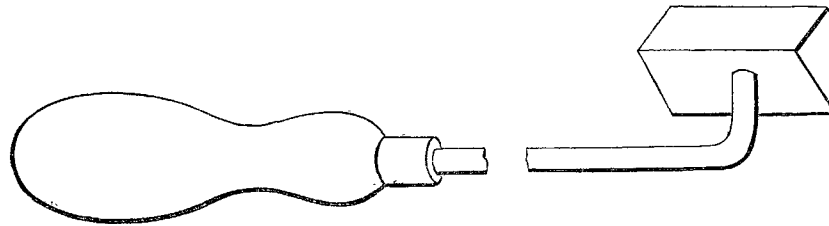


actual cautery. The iron which I use for this purpose is a triangular prism, mounted on a crooked stem. (Fig. 3.) It is heated to a white heat in a charcoal fire. The patient is to be put fully under the influence of chloroform, and a line is to be drawn on the skin, with a gentle pressure and a rather slow passage of the iron, from the trochanter backward. Formerly I used to

So instantaneous is the subdual of all painful symptoms, that not uncommonly a child who would previously be almost day and night in anxious watchfulness, dreading beyond everything the slightest movement, can hardly, after the application, be kept from jumping about the bed in the highest spirits. Do not, however, be deceived by such rapid and seemingly

Fig. 3.



make two or three lines, but I am now convinced that all the advantages are to be gained, and some inconveniences avoided, by the less extensive application. It is right that I should tell you what the iron will do, and what it will not do. In the first place, it will not of itself cure the osseous inflammation, but it may place it in a good position for getting well. We shall see by-and-by that the symptoms are referable to muscular spasm producing articular pressure, and that the inflammatory disease is kept up by that condition. Now, the hot iron instantly dispels this spasm and its consequences, at least for an interval, during which the general health improves rapidly, and the local malady has a fair chance of getting well.

total success; there are few cases in which the pain does not return. The only permanent remedy which I find for it is extension, but the cautery may be very useful as an aid to that mode of treatment. This subject of extension is one which I must speak of very fully in the next lectures, but I will now simply mention it to say, that even during this first stage of the complaint, before there is any lengthening or any shortening, but as soon as pain in the knee and muscular spasm commences, you will find that extending the limb, after the same manner that you have seen me do here, will be an almost complete specific.

NOTES OF EFFECTS EXPERIENCED DURING RECENT BALLOON ASCENTS.

By JAMES GLAISHER, Esq., F.R.S.,

SUPERINTENDENT OF THE METEOROLOGICAL DEPARTMENT AT GREENWICH OBSERVATORY.

The following is an account of my physiological experiments and experiences in my recent balloon ascents.

July 17th, Wolverhampton, on the ground :—

Mr. Coxwell's pulsations in a minute	...	74
Mine	...	76

At the height of 17,000 feet :—

Mr. Coxwell's pulsations	...	84
Mine	...	100

On the ground :—

Mr. Coxwell's pulsations	...	76
Mine	...	76

August 18th, at Wolverhampton, on the ground :—

Mr. Coxwell's pulsations	...	76
Mine	...	76

At the height of 22,000 feet :—

Mr. Coxwell's pulsations	...	98
Mine	...	100

At the height of 24,000 feet :—

Mr. Coxwell's pulsations	...	110
Mine	...	107

On Aug. 21st, at the height of 1000 feet :—

Mr. Coxwell's pulsations	...	95
Mr. Ingelow's	...	80
Captain Percival's	...	90

At 11,000 feet :—

Mr. Coxwell's pulsations	...	90
Mr. Ingelow's	...	100
Captain Percival's	...	88
Mine	...	88
My son's (a boy in his 14th year)	...	89

At 14,000 feet :—

Mr. Coxwell's pulsations	...	94
Mr. Ingelow's	...	112
Captain Percival's	...	78
Mine	...	98
My son's	...	89

The pulsations of Captain Percival were so weak that he could scarcely count them, whilst those of Mr. Coxwell he considered had increased in strength.

Mr. Coxwell had been in the car of the balloon all night ;

Captain Percival, Mr. Ingelow, myself, and son, had been to bed, at the Greyhound Inn at Hendon, and had walked one mile to the balloon, by four o'clock in the morning. The balloon left the earth at about half past four.

July 17th.—At the height of 17,000 feet the hands and lips were blue, not the face. At the height of four miles, the palpitations of the heart were audible. Mr. Coxwell heard mine, and I heard his. At higher elevations there was experienced considerable difficulty in respiration.

August 18th.—The hands and face were blue at the height of 23,000 feet.

Sept. 5th.—Mr. Coxwell panted for breath at the height of 20,000 feet. I did not, nor did I experience any particular inconvenience till I was above five miles from the earth. At about 26,000 feet I could not see the fine column of mercury in the tube; then the fine divisions on the scale of the instrument became invisible. At this time I asked Mr. Coxwell to assist me to read the instruments, as I experienced a difficulty in seeing them. In consequence of the continued rotatory motion of the balloon, which had persisted without ceasing since we left the earth, the valve-line had become twisted, and he had to mount into the hoop above the car to adjust it. At this time I had no suspicion of other than temporary inconvenience in seeing.

Shortly afterwards I laid my arm, possessed of its full vigour, upon the table, and, on being desirous to use it, I found it powerless: it must have lost its power almost momentarily. I tried to move my other arm, and found it powerless also. I then tried to shake myself, and did shake my body: I did not seem to be aware of having any legs, I could only shake my body. I then looked at the barometer, and whilst doing so my head fell on my left shoulder. I struggled and shook my body again, but could not move my arms. I got my head upright, but for an instant only, when it fell on my right shoulder; and then I fell backwards, my back resting against the side of the car, and my head on its edge; in this position my eyes were directed towards Mr. Coxwell in the ring. When I shook my body I seemed to have full power over the muscles of the back, and considerable power over those of the neck, but none over either my arms or my legs; in fact, I seemed to have no limbs. As in the case of the arms, all muscular power was lost in an instant from my back and neck. I saw Mr. Coxwell in the ring, and endeavoured to speak, but could not; and then, in a moment, intense black darkness came: the optic nerve lost power suddenly. I was still conscious, with as active a brain as at the present moment whilst writing this. I thought I had been seized with asphyxia, and that I should experience no more, as death would come, unless we speedily descended. Other thoughts were actively entering my mind, when, like every other symptom, I suddenly became unconscious, as if going to sleep. I cannot tell anything about the sense of hearing; the perfect silence of the regions six miles

from the earth (and at this time we were between six and seven miles high) is such that no sound reaches the ear.

My last observation was at 29,000 feet high, at about 1 h. 54 m. I suppose that fully two or three minutes elapsed before I became incapable of seeing the fine divisions, and that thus two or three minutes passed before I was insensible; therefore I think this took place at 1 h. 56 m. or 1 h. 57 m. While powerless I heard the words "temperature" and "observation," and I knew that Mr. Coxwell was in the car and speaking to me, and endeavouring to rouse me; therefore consciousness and hearing had returned. Then I heard him speak more emphatically, but I could not see, speak, or move a muscle. Then I heard him again say, "Do try—now do!" Then I saw the instrument's divisions, then Mr. Coxwell, and very shortly I saw clearly. I rose on my seat and looked round, as though waking from sleep, and said to Mr. Coxwell, "I have been insensible." He said, "You have, and I too very nearly." I then drew my legs up, which had been extended out before me, and took a pencil in my hand to begin observations. Mr. Coxwell told me he had lost the use of his hands, which were black, and I poured brandy over them.

I resumed my observations at 2 h. 7 m. I suppose three or four minutes elapsed from the time of my hearing the words "temperature" and "observation" till I began to observe; if so, the returning consciousness came at 2 h. 4 m., and thus gives about seven minutes for total insensibility.

Mr. Coxwell told me that on coming from the ring, he thought for the moment I had laid back to rest myself; that he spoke to me without eliciting a reply; that he then noticed that my legs projected, and my arms hung down by my side; that my countenance was serene and placid, without the earnestness and anxiety he had noticed before going into the ring, and then it struck him I was insensible. He wished then to approach me, but could not; and he felt insensibility coming over him; that he became anxious to open the valve, but was unable, in consequence of having lost the use of his hands; ultimately, however, he effected his object by seizing the cord between his teeth, and dipping his head two or three times.

No inconvenience followed this insensibility, and when we dropped it was in a country in which no conveyance of any kind could be obtained, so that I had to walk between seven and eight miles.

We never in any trip (and we had been up in eight altogether) experienced any ringing in the ears, or any tendency to bleeding at the nose, or indeed any other physiological symptoms than those described.

I believe I have described my sensations precisely as they occurred. I recollect them as well as though they had just happened, and I wrote them all down on the same night.

Dartmouth-place, Blackheath, Nov. 1862.

#### ON A

### CASE OF RHEUMATIC FEVER; CHOREA BY METASTASIS.

#### DEATH, AUTOPSY, AND REMARKS.

By ISAAC BAKER BROWN, JUN., ESQ.

I WAS sent for on the evening of Saturday, the 20th of September last, to see Annie W—, aged nine years, the only child of respectable parents. I found her sitting, crouching by the fire, with a flushed face, and hot dry skin; but complaining of cold and thirst. Always a delicate child, she had been ailing for the last two days; pulse frequent; great heat of skin; tongue coated with a white fur, and of a vividly red colour at the edges and tip; and general derangement of all the natural functions. These symptoms were preceded by languor, lassitude, and other signs of great debility. Her motions had been constipated and offensive, and, on pressure, she complained of slight pain in the abdomen, especially in the iliac fossæ. As the disorder could not be traced to any imprudence of diet, I considered it as the commencement of gastric fever, similar to several cases under treatment at the same time. I therefore sent an emetic draught, containing ten grains of ipecacuanha, to be followed by an aperient in the morning; also a mixture, containing liquor of acetate of ammonia, half an ounce; spirit of nitrous ether, antimonial wine, of each a drachm; syrup, half an

ounce; infusion of senna to four ounces: half an ounce every four hours.

Sept. 21st.—Eleven A.M.: Dr. Robbs saw her. She had been very sick after the emetic, and perspired freely. Her bowels also had been moved; the tongue less coated, but still very red. A continual feeling of sickness. The other symptoms continued, but in a less degree. Ordered, chlorate of potass, one drachm; dilute hydrochloric acid, one drachm; chloric ether, half a drachm; syrup, three drachms; to six ounces of water: half an ounce every four hours. And as she could not take powders, a pill, containing mercury and extract of henbane, of each one grain, and three grains of compound extract of colocynth, was given at bed-time. I saw her in the evening, and she seemed in much the same state.

22nd.—Has had a bad night; bowels freely relieved this morning. As she complained of great pain and heat in the head, she was ordered an evaporating spirit-of-wine and ether lotion. Pulse 100; tongue very red; skin hot and dry; aching of the whole body, and great lassitude. Continue treatment.—Eight P.M.: Complaining of pain in the right foot and "aching all over;" great restlessness. Ordered, tincture of sumbul, half a drachm; colchicum wine, ten minims; water, one ounce: one half of the mixture to be taken immediately, and the other at the end of four hours if necessary.

23rd.—The poor child had had no sleep. Both ankle-joints and feet were now intensely painful and swollen, and the case was fully developed as one of rheumatic fever. Ordered, bicarbonate of potash, four scruples; iodide of potassium, six grains; tincture of hyoscyamus, one drachm; colchicum wine, half a drachm; infusion of calumba to three ounces: mix, and take half an ounce with each pill every three or four hours. Mercury with chalk, three grains; compound ipecacuanha powder, one scruple; mucilage sufficient to make six pills: one to be taken with each dose of the mixture. Tincture of opium and chloroform, of each two drachms; compound camphor liniment and soap liniment, of each one ounce: make an embrocation, to be used occasionally. Also to drink freely of lemonade, &c.—Evening: The pain had extended from the feet and ankle-joints up the muscles of the legs to the knee and hip-joints. The countenance of the child was becoming extremely anxious and distressed; the tongue red, and its papillæ large, and standing out like beads from the surface. Had passed a fair amount of urine of a very bright colour, but throwing down no deposit. To continue the medicines, and ordered warm fomentations to the affected parts.

24th.—A sleepless night: the pain of the lower extremities relieved by the warm fomentations, but the hands, arms, and shoulder-joints attacked; pain so acute in the hands as to prevent her using them even to feed herself. Continue treatment, and take four drachms of castor oil immediately. She was rather better in the evening, and seemed inclined to doze; pain also much less severe.

25th.—Has had a tolerably good night; but this morning the intercostal muscles and fasciæ have been affected; the pain in lower extremities nearly gone. In the evening I saw her with Dr. Robbs. Breathing extremely painful. On auscultation, there was neither inflammation of the lungs or pericardium, the difficulty of breathing being due merely to muscular contraction. Continue treatment.

26th.—The pain in the chest and also abdomen excessive; a very restless night in consequence. Repeat mixture, omitting tincture of hyoscyamus, and adding tincture of opium, forty minims. Mercury with chalk, three grains; compound ipecacuanha powder, half a drachm. Make into six pills: one to be taken with each dose of the mixture.

27th.—Has had a much better night; but the tongue continues so inflamed, that she can eat nothing, nor indeed hardly take her medicine. Ordered, biborate of soda, one drachm; liquor of acetate of ammonia, one ounce; honey, one ounce; water to eight ounces. Mix, and use when occasion requires.—Evening: Suffering continues great, the chest and abdomen being especially painful. Dr. Robbs saw her, and ordered a draught with Battley's solution, fifteen minims, immediately, and repeated every fourth hour if necessary.

28th.—Dr. Robbs saw her. Pain greater than ever, and the child seeming to lose her reason; tongue very inflamed; skin hot; pulse very frequent. To take twenty minims of opium wine in half an ounce of water immediately. Bicarbonate of potass, two drachms; colchicum wine, opium wine, of each one drachm; syrup, half an ounce; water, six ounces: half an ounce to be taken every second hour.—Evening: I saw her with Dr. Robbs. The pain in the chest was intense, and we recommended her to be enveloped in flannel wrung out of hot water, and wrapped in dry, warm blankets.