On the right side the amount of sclerotic uncovered by the eyelid is about one-third the width of the cornea. There is no injection of the conjunctiva. She complains of a feeling of tightness in the throat, and of frequent palpitation of the heart and of beating in the neck. There is, and has been, no dyspnoea, but there is occasionally some difficulty in swallowing liquids, but none with solids. The lower half of the neck in front is much enlarged, chiefly on the right side, and even at a distance the pulsation of this swelling and of the carotids is quite apparent. This swelling is the enlarged thyroid gland preserving its normal shape, the right lobe being much enlarged; the left in a less degree, and the isthmus not at all. With the pulsation there is a distinct purring thrill. The heart beats forcibly, the impulse being somewhat more diffused and more external than normally. The sounds are loud and ringing, with some reduplication of the second at the apex, and of both at the base. There is no murmur. Pulse 120. She is quite unable to do any work. She is very restless at night, and complains of feelings of burning heat, accompanied with violent palpitation, and terminating in profuse perspirations. There is no cough, no headache, no dizziness. The temperature was taken (very irregularly), but no pyrexia was found.

Treatment.—For four months she had been taking steel medicine, to which the absence of anæmia may probably be attributed. She was now ordered ten minims of tincture of digitalis with four minims of tincture of nux vomica four times a day. This was given for a fortnight with no material relief, and now was added the use of the constant current every other day, applying the positive pole over the sternal notch, the negative behind the ramus of the jaw. The current was weak, and was applied two or three times at each sitting for about a minute; it induced faintness and giddiness if continued longer than this. The effect on each occasion was to reduce temporarily the frequency of the pulse, and in three weeks the enlargement of the thyroid body was decidedly less, but there was no relief of the palpitation, nor of the exophthalmos, nor of the profuse perspirations.

After two months' treatment (during which time no iron was given) she became very anæmic, and with this appeared for the first time anorexia and indigestion. Fifteen minims of tincture of perchloride of iron and of liquid extract of ergot were now administered four times a day. This medicine she took for four weeks, and being then no better she was sent to St. Thomas's Hospital, where, among other drugs, veratria was given. She was, however, unwilling to stay in the hospital, and left it in no way improved.

In July, five months after first seeing her, I saw her again, and found her worse than ever. Pulse 140; anæmia most profound; the eyeballs appearing as if they would burst from their sockets. She was now confined to bed by extreme weakness, and by the painful palpitation which occurred on the slightest exertion; but the symptom most complained of was the burning heat which came over her from time to time, and terminated in a drenching perspiration, leaving her in a most exhausted condition.

Aconite was next given in doses of one minim every hour, but was withdrawn after two days' use, as it seemed to give no relief. I was now induced to try belladonna, as a mere experiment, on two grounds: first, that the disease is considered by some to be essentially a paralysis of the cervical sympathetic; secondly, the statements of Dr. John Harley and Dr. Meryon, that belladonna is a stimulant of the sympathetic. Five minims of the tincture were given every hour. Compared with previous treatment the effect was surprising. In two days the pulse was 90, the palpitation very materially relieved, and the outbursts of perspiration very much subdued. In four days the pulse was 80, and on the fifth day the patient walked from King's Cross to Paddington and back again. For ten days no other drug was given, and it had once to be suspended owing to an intercurrent attack of diarrhoea. The dose was then reduced to fifteen minims four times a day; subsequently iron was added.

The relief of the palpitation, of the quick, throbbing pulse, and of the profuse perspiring was, so to speak, immediate. The patient was restored to comfort and ease in a fortnight. Amelioration in other respects was gradual, and is still progressing. The diplopia was removed in six weeks. It was quite two months before decided improvement in the exophthalmos could be reported.

Now (May, 1874), no sclerotic is seen above the cornea when the eye is wide open; the enlargement of the thyroid is nearly gone, and the patient is now in a very fair condition of health and strength.

CASE 2.—Miss H—, aged twenty-six, came under my care in May, 1873. For several months she had noticed that the neck had been enlarging on the right side, this condition being accompanied with beating in the neck, palpitation of the heart, and great exhaustion. She was very restless and fidgety, and refused to see her friends on account of the scarlet suffusion of the face which came over her on the slightest excitement, together with the beating in the neck and the palpitation of the heart. There was slight anæmia, but no amenorrhœa. Pulse 130. The thyroid gland was greatly enlarged on the right side, and pulsated, with a marked systolic thrill. In this instance there was no exophthalmos, but the eyelids were swollen, lachrymation was often profuse, and the patient complained very much of the feeling of grittiness in the eyes. There was no conjunctivitis. Having known the patient previously, one could not help noticing the change in the facial expression. The face was pinched, the alæ nasi depressed, the features had become quite coarse, and the skin had assumed a brown, dull, unwashed appearance. There was no cough, no pyrexia, and, as in the other case, no dyspnoea. Constipation was a most troublesome and obstinate symptom. She suffered very severely from attacks of "flushings," which occurred most frequently at night, and on account of which she would have the windows thrown open. These "beats" were accompanied by violent palpitation of the heart, and terminated in profuse perspiration, and often in great prostration.

Treatment.—For three months various remedies were tried, in the following order: iron; digitalis; valerianate of zinc; ice to the neck; aconite; iodine internally; and the constant current: with very little if any relief. In July I began the use of belladonna, giving five minims of the tincture every hour. The effect in relieving the palpitation, reducing the frequency of the pulse, and in subduing the "flushings" and perspirations, was quite as manifest as before; but meanwhile other symptoms had appeared—namely, severe headache, occasionally followed and relieved by copious epistaxis, and attacks of angina, which were on two or three occasions so severe as to require the administration of chloroform. Belladonna alone quickly relieved all these symptoms, and in a month's time she might fairly be considered cured. The muddiness of the complexion was gone, and her natural expression was restored; the pulse was 70, and the palpitation removed. But the thyroid gland has undergone little reduction, and has become firm and hard by a fibroid change.

It is a rather interesting fact that in both patients there was a considerable development of fat after the relief given by belladonna. In both cases there have been some recurrences of the symptoms, but they have speedily given way on resuming the treatment. The drug was not given during sleep, and it is noteworthy that reduced doses sufficed as the treatment was continued. Harley states that moderate doses cause contraction, large doses dilatation of the arteries; and it is therefore of great importance that the varying susceptibility of individuals in reference to this drug be kept in mind.

But as there are cases of palpitation quite unassociated with exophthalmos and enlargement of the thyroid, which are greatly benefited by belladonna, it is possible that in the above two cases the relief given was primarily through the heart, the drug acting sedatively thereon.

Haverstock-hill.

FRACTURE OF CERVICAL SPINE; GREAT RISE OF TEMPERATURE AFTER DEATH.

By AMIRAUX GODFRAY, M.R.C.S.E.

EARLY one morning in April I was called to see a French man, Pierre A—, who had fallen a short time before into the pier, a height of 15 ft. (the water being low at the time); and in his descent had struck the nape of his neck with full force against the bulwarks of a ship he was engaged in loading. He was a man forty years of age, of small stature, lying on his back in bed, helpless, and perfectly

sensible, temperature 90°, pulse 52, respiration 12, breathing with great difficulty, priapism, and complete paralysis of sense and motion of the four extremities; in a word, the evidence of fractured cervical spine being but too plainly marked. He had common sensation to nipples—i. e., line of extent of superficial branches of cervical plexus,—the *scaleni antici* and other extraordinary muscles of respiration making vigorous efforts to raise the thorax. The bladder was much distended, although he had passed water a short time before. He spoke slowly but distinctly, and, being sober, informed me that he had fallen on the back of his neck, and was sure from the grating he felt that it was broken. On gently attempting to turn him on his side his breathing ceased, and I felt that I had been the unwilling instrument in quenching the last flicker of the rapidly ebbing flame of life; but on his posture being resumed he slowly began to breathe. His temperature began slowly to rise five minutes before his death; he was perfectly sensible, and said he was suffocating, complaining of great thirst; *skin hot and perspiring*.

Temperature 106°, as taken between the scrotum and groin, almost at the moment of death (11 A.M.) Five minutes after death (11.5) temperature 107°; 12 A.M., temperature 105.3°; 12.30, temperature 105.2°. Now it occurred to me to take it in the rectum; and on turning him over for that purpose I was struck by the fact that rigor mortis was already well developed. Temperature in rectum 109° (12.30), as compared with 105.2° in groin; temperature 108.2°, 1 P.M.; 107°, 1.30 P.M.; 106.2°, 2 P.M. And now I regret I ceased to take it, regretting the more that from the moment of death it was not taken in the rectum.

Post-mortem examination.—Integuments of neck deeply blood-stained. The sixth cervical had been torn from its connexion with the seventh; its spinous and transverse processes, as also the latter in the one above, were fractured by the displacement that had occurred at the time.

The possible causes which may serve to explain the extraordinary rise of temperature observed in this case are the following:—

1. Contraction of muscles throughout the whole body—i. e., rigor mortis.

2. Contraction of cutaneous capillaries, tending to continuation of circulation in deeper parts, whilst forming a non-conducting blanket generally.

3. Paralysis of the nerve-centre, regulating or inhibiting the temperature of the body; cause unknown.

I have since seen a case of fracture of the dorsal spine, but here the temperature was below normal at death, and fell in the usual way. Recent research has rendered it probable that there is an inhibitory or regulating centre for animal heat in the *upper part of the cord*. We must suppose, if this theory be correct, that in the case I have recorded this centre was paralysed.

Jersey.

A Mirror

OF

HOSPITAL PRACTICE,

BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. THOMAS'S HOSPITAL.

CASES OF TUBERCULAR MENINGITIS.

THIS week we complete the series of cases of tubercular meningitis admitted into the above hospital during the year 1873. We are indebted to Dr. W. S. Greenfield, medical registrar, for the careful and accurate records of all the cases.

The interest of the following case lay in the difficulty, at the time of admission, of diagnosis from acute meningitis. The history was to some extent obscure, and no cause could be assigned for the onset of the attack other than a burn, which the relatives naturally concluded to be the exciting cause. The presence of diarrhoea, and the very rapid course

to a fatal termination, only seven days after the first well-marked symptom, if the history can be credited, were also against a correct diagnosis. It will be observed that in this case there was an entire absence of affection of the eye as seen with the ophthalmoscope—another proof in favour of the diagnosis of meningitis of the vertex. The total absence of such change is not, however, uncommon in tubercular meningitis of the base. In only three of the six cases recorded in this series was there well-marked optic neuritis, and even in one of the three cases it may be questioned whether the neuritis was not really dependent on a tumour in the cerebellum. In one case there was merely congestion of the retinal vessels; in another the eyes were not examined during life; whilst in the third case, that now recorded, no change was visible before or after death. In the preceding case, p. 833, where the optic neuritis was well marked, it will be observed that after death there was found decided fluid distension of the optic-nerve sheaths close to the eyeball. This condition Dr. Greenfield has frequently observed in cases where optic neuritis was made out before death.

CASE 6.—M. A. A—, female, aged three years, was admitted on October 15th, 1873, under the care of Dr. Murchison. The family history was good, both parents living and healthy; all the other children, five in number, are living and healthy. The patient was said to have been well till Sept. 28th, when she was scalded on the head; she presented, however, no marked symptom until Oct. 12th, when she began to be sick and vomited three or four times during the night. Diarrhoea set in at the same time, and, together with the vomiting, continued till the evening before admission. The child had been constantly quiet and drowsy since the attack.

When admitted she was quiet, apparently unconscious; no lividity; skin cool; left pupil considerably larger than right, and sluggish; a synchronous movement of eyeballs; slight ptosis of right eyelid; no other sign of paralysis; abdomen not retracted; no hyperæsthesia; no well-marked *tâche cérébrale*; no marked physical signs in chest. Temperature 102° in evening; pulse 92, regular, but weak. Two leeches were applied to the right temple and an ice-bag to the head.

Oct. 17th.—In much the same condition. Constant uneasy movements of the right arm and leg, the left arm being scarcely moved, and occasional convulsive twitchings of the eyeballs towards the right side. Temperature in morning 99.6°, evening 103.8°; pulse irregular and rapid, about 140; respiration about 36, shallow and irregular; bowels still confined; no vomiting.

18th.—There is now great difficulty in swallowing, and the patient is evidently sinking; general state unchanged. Temperature 102.4°; pulse 160, regular and equal. With the ophthalmoscope, outline of both discs clear, with deep natural margination; arteries and veins both somewhat full, but not excessively; no sign of optic neuritis and no tubercle visible in the choroid.

19th.—Died quietly at 8.30 A.M.

Autopsy, thirty hours after death.—Body well nourished. Pleuræ: No adhesions; very numerous grey granulations on visceral layers.—Lower lobes of both lungs much congested, and throughout both lungs were a few very sparsely scattered grey granulations, much less numerous than in the pleura. Bronchial glands enlarged, white; on section some were studded with minute, semi-translucent, whitish points, whilst others were in a state of commencing caseation, but with no sign of old disease. Heart normal. Liver of normal appearance, with some granulations in its capsules, and a few in the substance of the organ. Spleen not enlarged, but with numerous and distinct granulations. The kidneys also presented a few tubercles, otherwise they were natural. Intestines generally healthy, but glands of colon distinct and somewhat prominent.—Brain, &c.: Dura mater sinuses full of dark, semi-coagulated blood; superficial veins of brain also very full of blood; convolutions of hemispheres much flattened; much subarachnoid fluid. Brain weighed 49½ ounces. A large quantity of tubercular exudation around optic commissure, and matting together the nerves at the base, extending some distance along the Sylvian fissures. Lateral sinuses greatly dilated, especially the posterior cornu of the left. Corpus callosum softened; the fornix less so than usually; very little tubercle in the velum interpositum. No distension of sheath of optic nerves. Eyes appear natural. No tubercle in choroid.