

richness of the blood. But although it has been surprising that this little patient's heart has shown so little signs of weakness after frequent and very considerable losses of blood he has suffered from palpitation and quickening of the heart's beat in the last few hæmorrhages—the effect of nervousness, I believe. There has been no rise in temperature. Red bone marrow in tabloids and in the fluid form of elixir was tried with fairly satisfactory results. It is supposed to increase the production of red blood corpuscles and of hæmoglobin and it certainly improved my patient's appetite and brought him round much quicker after a severe hæmorrhage than had been the case when it was not used. It does not seem to have any effect on the bleeding, but it does seem to be a most useful food and stimulant to eating while bleeding is going on. This was found also to be the case with a little child, also a "bleeder," under my care at the Lincoln County Hospital.

Lincoln.

A NOTE ON X-RAYS AND COLOUR-BLINDNESS.

BY SYDNEY STEPHENSON, M.B., F.R.C.S. EDIN.,

OPHTHALMIC SURGEON TO THE EVELINA HOSPITAL AND TO THE NORTH EASTERN HOSPITAL FOR CHILDREN;

AND

DAVID WALSH, M.D. EDIN.,

PHYSICIAN TO THE WESTERN SKIN HOSPITAL AND HONORARY SECRETARY TO THE ROENTGEN SOCIETY.

FROM time to time sensational reports have been published as to the effects of the Roentgen rays upon various defective conditions of the eye. It was asserted, for instance, that cases of blindness had been relieved by the aid of the focus tube. In the hands of competent observers, however, the results of similar experiments have proved negative. The fallacy of the original observations may have lain in the fact that they dealt with cases of hysterical blindness—that is to say, with patients who might profess themselves cured under any novel plan of treatment. Or, again, the blindness may have been due to opacity of the cornea or of the lens, whereby ordinary light would be excluded but no resistance would be offered by the opaque tissues to the passage of the Roentgen rays. A reference to some of the early literature on the subject shows that none of the alleged cases stand the test of critical examination.¹

Professor Murani of Milan investigated five cases. One of congenital and two of acquired blindness, and two of light perception without sense of form. The two latter saw the glimmer of the screen and one of the two could count the shadows of the bones of the hand although unable to distinguish the form of keys; the three others saw nothing.

It has lately been claimed that the retinae of colour-blind persons were acted upon strongly by the Roentgen rays. In order to test this assertion four colour-blind children were subjected to the rays emitted from an ordinary bianodal focus tube attached to a 12-inch coil working at nine inches. The children were two of them aged eight years, one nine years, and the fourth 11 years and of good intelligence. Their colour-sense was defective in red-green and their form-sense was normal. Perception of light and form proved normal when tested by the screen enclosed in a bellows fluoroscope. When the children looked steadily at the brilliantly lighted tube they showed no signs of photophobia. They all recognised objects, such as keys, when held against the bare tube or against the screen. The after-phosphorescence of the tube was seen by all of them, as well as the greater intensity of the area in front of the anti-kathodal plane. Lastly, there was no sensation of light when the eyes were shut and bandaged and the children put in front of the "live" tube at the level of the eyes. To sum up, there was no reason to suppose that the retinae of these four colour-blind children reacted to the focus tube in any way differently from those of folk with normal colour-sense.

Bentinck-street, W.

¹ Dr. D. Walsh: Roentgen Rays in Medical Work, 1897, p. 119.

MONMOUTH COUNTY ASYLUM.—At the meeting of the Monmouthshire County Council held on May 3rd it was decided to purchase at an approximate cost of £8000 a farm adjacent to the county asylum at Abergavenny for purposes of further development.

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. MARY'S HOSPITAL.

A CASE OF TETANUS TREATED BY THE INJECTION OF ROUX'S ANTI TETANIC SERUM INTO THE SUBDURAL SPACE; RECOVERY.

(Under the care of Mr. H. S. COLLIER.)

WE have reported recently several cases of tetanus in which the antitoxin has been employed, and we are able now to record two other instances in which this treatment has been resorted to. The case in the Royal Hants County Hospital is a good example of a severe case with a comparatively short incubation period—namely, seven days; the disease itself lasted only about 48 hours, and although 20 cubic centimetres of antitoxin were injected, yet death ensued. In the other case the antitoxin was injected into the subdural space. In April, 1898, Roux and Borrel¹ published the results of some experiments on tetanus which showed that if the toxin of tetanus has already affected any nerve cells the antitoxin is powerless against it, but if the antitoxin be injected into the substance of the brain at an early stage of the disease when the lower nervous centres only have been affected the antitoxin will render the higher centres immune to the toxin. The method was tried in Paris and recovery followed,² and in 20 or more cases in France this treatment has been followed. Major Semple, R.A.M.C., has recorded a case in which this treatment was followed by recovery.³ In the case at St. Mary's Hospital which is reported below the injection was made into the subdural space instead of into the substance of the brain; this is evidently less dangerous and is well deserving of more extended trial. In the present state of our knowledge all cases should be put on record. For the notes of that case we are indebted to Mr. C. H. Straton, late house surgeon.

A man, aged 27 years, was admitted to St. Mary's Hospital on Feb. 25th, 1899, for difficulty in swallowing and stiffness of the lower jaw. 14 days previously, while chopping wood, he cut the tip of his left thumb. At the time he took no notice of it, though it seems to have been rather a severe cut. He continued his work as a coachman and stable hand. On Feb. 20th, five days before admission and nine after the injury, he noticed a good deal of pain and stiffness in his chest which he attributed to cold. The next day he had pain in the abdomen which "seemed to draw his chest down on to his stomach." On the 23rd his jaw became stiff and there was difficulty in moving the muscles of his neck and head. On the 24th swallowing became difficult and opening the mouth almost impossible. On the 25th, being worse, he attended at the hospital and was admitted.

On admission the patient was in a very anxious state; he was quite unable to swallow solids and could only swallow liquids with very great difficulty. The body was very rigid and when voluntary movements were attempted they took a very jerky form. The sterno-mastoids were very rigid and stood out like bars on either side of the head. Lateral movement of the head was impossible. The masseters were strongly contracted, but on effort the jaw could be dropped so as to leave an interval of about half an inch between the upper and lower incisor teeth. There was a depression of the angles of the mouth with contraction of the corrugator supercilii, giving the typical facies. The recti abdominis were very rigid, the other abdominal muscles being less so; the pectorals and intercostals were slightly rigid. The limb muscles were relaxed. The knee-jerks were exaggerated. While being washed he had a short, sudden, shuddering

¹ Annales de l'Institut Pasteur, April, 1898.

² La Presse Médicale, June 18th, 1898.

³ Brit. Med. Jour., vol. i., 1899, p. 10.