the first time a large quantity of stercoraceous matter and on passing a stomach tube much more was drawn off. Three hours later by my direction the tube was passed again and another large quantity of stercoraceous matter was syphoned off and the stomach was washed clean. After this there was no more regurgitation from the small intestine into the stomach and all went well, the bowels acting on the fourth day. There appears to be no reason to fear that the pregnancy will be in any way influenced by the operation.

After the operation I made at once a rough drawing of the state of things found at the operation and from this the accompanying illustration has been prepared. It is sufficiently accurate to show the peculiar nature of the lesion.

A, Afferent jejunum coming out from under the plica duodeno-jejunalis (B). C, Termination of the afferent duodenum dragged back to the hidden anastomosis from which (D) the efferent jejunum is passing in its turn over the afferent portion (A to C). G, Last part of the ileum twisted round the efferent jejunum and terminating in (I) the end of the ileum at the ileo-caecal valve. H, Distended coils of the jejunum in the general cavity of the abdomen. K, Coils of the ileum in the general cavity of the abdomen. It is seen from this diagram that the whole of the small intestine with the exception of the first and last seven or eight inches passed behind the gastro-enterostomy junction and was strangulated over the afferent portion where it formed a large volvulus.

The inclusion was so far advanced that the junction of the stomach and jejunum had actually been dragged under the afferent coil so as not to be visible until reduction had been effected. Naturally this prevented all regurgitation of intestinal contents into the stomach, so that there was no stercoraceous vomiting until immediately after the operation and while the patient was still on the table. It was then very abundant, as might be expected, seeing that the whole of the small intestine, with the exception of the first and last seven inches or so, had passed under and over the constriction and had formed a volvulus besides. Until the latter had been untwisted no safe amount of pull upon the last seven inches could move it, but when the volvulus was reversed it came out easily and quickly. Then the regurgitation of the loaded jejunum into the stomach began at once.

We were fortunate in securing an early operation in this case; a little later the result was almost sure to have been disaster. But the patient was most desirous of operation and said: "If you can give me as much relief this time as your previous operation gave I shall be satisfied." She is now sitting up in bed quite well (August 10th) and returns home on Saturday (August 13th), not quite three weeks after the operation.

Note.—Oct. 29th: By request the patient returned to-day to hospital for examination. She looks and feels perfectly well and has had no trouble of any kind since the operation. The bowels act regularly and well and her pregnancy is nearing its termination in December so far quite satisfactorily. There has been no sickness since the operation. The scar is firm.

Marley-street, W.

SUTURE OF WOUND OF THE HEART.

By EDGAR SOMERVILLE, M.D., F.R.C.S. EDIN.

ON July 26th, 1904, I was summoned to see a man who, while in a public reading room, had attempted suicide by pushing a penknife into his heart. He gave me the following details of his *modus operandi*. He was standing reading a newspaper which was placed on a sloping wooden desk when he had a sudden impulse to take his life. He undid his waistcoat and felt for his apex beat; he then held his penknife with the large blade opened fixed to the reading-desk with his hand and bent down upon it with his whole weight, and being a tall man, over six feet, he had no difficulty in getting a good deal of pressure to bear upon the point of the knife. The blade entered the chest wall between the fifth and sixth ribs for its entire length, which was two and a half inches. He allowed the knife to remain in this position for about half a minute, during which time he broke out into a profuse perspiration and had a feeling of warmth all over his body. Being surprised and disappointed that he was still alive he withdrew the knife and re-inserted it directly above the first wound, between the fourth and fifth ribs, using the same method as before for introducing it, this wound being also to the full extent of the blade. He left the knife in position and noticed the handle move up and down with each cardiac systole. Not being satisfied with this he rotated the knife twice. At this period of the proceedings a man entered the reading room and removed the knife. I saw him about five minutes after the injury. He was then in a state of profound collapse. He was extremely pale and very faint and perspiring profusely. Both wounds were bleeding rather freely. His heart's action was feeble, the cardiac sounds being only heard with difficulty. The pulse at the wrist was barely perceptible and very irregular in time and volume. The respirations were 36 to the minute. He said that he had little pain beyond a smarting at the skin incisions. He was given a subcutaneous injection of strychnine and laid down flat. Temporary dressings were applied and he was removed a short distance to the cottage hospital.

The operation was commenced about 50 minutes after he was found. He was put under ether which was preceded by chloride of ethyl so as to reduce initial struggling and excitement. Two punctured wounds were seen over the præcordium—the upper one in the fourth intercostal space and the lower one in a vertical line below it in the fifth intercostal space, both wounds being situated between the left parasternal and mammary lines. The upper wound was enlarged laterally in both directions, making an incision of four inches; a vertical incision was made joining the two self-inflicted wounds and continued for two inches below the lower wound. The two triangular flaps of skin and muscle thus made were reflected, the upper limit of the exposed area retracted upwards and two wounds were found, one in the fourth interspace and the other in the fifth interspace, these corresponding to the wounds in the skin. The man being tall and having a long thorax the intercostal spaces were larger than usual and it was not found necessary to resect the ribs. The wound in the fourth interspace was enlarged and the pericardium exposed; this also was found to be wounded and the wound was enlarged. The pericardial sac was full of blood and on removing this a wound was found in the left ventricle of the heart, three-eighths of an inch in length, with its long axis in the long axis of the ventricle. The visceral layer of pericardium had retracted, making the wound spindle-shaped, and the aperture was plugged with some lacerated myocardium, this laceration having probably been produced when the knife was rotated. Blood was oozing from the wound but the heart's action was so rapid and irregular that it was difficult to say at what period of the cardiac cycle the hæmorrhage was greatest. The lacerated cardiac muscle which was protruding was removed by scissors and the hæmorrhage then became more profuse but was arrested by the introduction of the tip of the little finger into the wound; this had also the effect of steadying the heart for the introduction of sutures, these being passed during diastole. The needle used was a curved intestinal one and was passed deep into the myocardium just short of the endocardial lining of the ventricle. Three interrupted silk

sutures were found necessary. During the suturing the action of the heart became even more irregular and embarrassed than before and the patient's condition gave rise to considerable anxiety, but after the finger had been removed and the sutures tied and a hypodermic injection of strychnine given the heart's action considerably improved. The pericardial sac was cleansed, a gauze drain was introduced, and the wound in the pericardium and intercostal muscles was closed. The lower wound in the fifth interspace was then enlarged; here it was found that both the pleura and pericardium had been opened producing pneumo-hæmorrhage and pneumo-hæmopericardium, but the heart here had escaped injury. The wounds of the pericardium and pleura were cleansed, a gauze drain was introduced, and sutures were inserted. The cutaneous incisions were closed and dressings were applied.

At the close of the operation, which had lasted three-quarters of an hour, the patient's condition was very bad. The heart's action was feeble and irregular, and the pulse was barely perceptible at the wrist. He was removed to bed, strychnine was given hypodermically, and a saline enema containing brandy was administered. In an hour he had greatly improved, the pulse being much steadier and stronger and 100 to the minute. As time went on he continued to improve and four hours after the operation the pulse was 80 and fairly good. There was no vomiting after the anæsthetic and the patient took some milk in the evening. His temperature at 10 P.M. was 99·6° F., the pulse was 76, and the respirations were 24. He did not sleep well, however, but had many delusions, believing himself to be the victim of a secret society. On the day following the operation (July 27th), the morning temperature was 99·4°, the pulse was 80, and the respirations were 24; the evening temperature was 99·2°, the pulse was 72, and the respirations were 22. He was with difficulty persuaded to take food, believing it to have been poisoned. The wound looked well. The gauze was removed on the 28th, when his temperature was normal and his pulse was 68. The subsequent history of the wound was uneventful, healing being by first intention. His mental condition became worse, he had more delusions, he was sleepless, and often refused food. On August 10th, 15 days after the operation, he had become so noisy that it was found necessary to remove him to an asylum. His heart's action then was good and his pulse was 80 and quite regular. On the 26th he was allowed to get out of bed; since that time he has been up daily and his heart's action is perfectly regular. He had consulted me a few days previously to the injury for dyspepsia and when I examined him he had a systolic mitral murmur. This murmur could not be heard for some days after the operation but a fortnight later it had returned. The temporary disappearance of the murmur was probably due to the ventricular systole not being strong enough after the operation to bring out the murmur.

Leek, Staffs.

ON HÆMOPHILIA AND ITS TREATMENT.

BY LACHLAN GRANT, M.D., C.M. EDIN.,

MEDICAL OFFICER, BALLACHULISH.

It is still uncertain whether abnormal conditions of the vascular system or morbid conditions of the blood itself are the cause of the dangerous hæmorrhage occurring in those affected with hæmophilia; in fact, the etiology and pathology of this distressing disease are practically unknown. However, this much is known, through observations extending over several centuries the hereditary transmission of hæmophilia has been conclusively demonstrated. One important circumstance concerning the "bleeder's disease" is that it nearly always affects members of the male sex and that although women can transmit to their sons the tendency to bleed it is a striking fact that they themselves very seldom suffer from the disease. So rarely does it affect females that Legg, who has written one of the most important papers on the subject, goes the length of saying: "I have never seen a case of true hæmophilia in a woman and I am inclined to think that the diagnosis of cases of hæmophilia in women is founded on mistaken observations."¹

That females mostly escape is a very important element in the problem and it led me to think that it might possibly

have some bearing on the treatment of this disease which is still largely empirical. The condition is in all probability present in the females of hæmophilic families, although it would appear to be held in abeyance throughout life in some as yet unknown way. That there must be some restraining influence in the blood or tissues of the female is evident when we take into consideration the opportunities for hæmorrhage during the separation of the placenta. Were this not so the contraction of the uterus would not of itself be sufficient to control the hæmorrhage. But it seems that parturition has no special dangers for hæmophilics, for daughters of bleeders who marry "often show an average fecundity nearly double that of the ordinary population."²

It naturally suggests itself whether this female immunity is not due to some constitutional influence emanating from the female reproductive centre—this probably through an internal secretion of some kind, possibly ovarian—and, further, whether the internal administration of extract of ovaries, mammary gland, or other tissues peculiar to the female, would have any effect in lessening the tendency to dangerous hæmorrhage in cases of hæmophilia. It is well known that the ovaries have a profound influence in the female. Thus, as a result of double ovariectomy, the climacteric with its train of symptoms is induced, and these symptoms are in turn said to be ameliorated by the administration of ovarian extract.

During the past ten years I have had under my care four individuals, all males, for conditions aggravated by the hæmorrhagic diathesis. They were all offshoots of a certain family. One was a boy, aged eight years. The others were his uncle and his uncle's two cousins. Though in this article I will chiefly refer to the boy's case, I may in passing mention that, of the others, one bled to death as a result of an abscess of the thigh, another had round his right ankle extravasations which took months to absorb, and the third suffered from epistaxis of three days' duration which ultimately ceased after the local application of adrenalin and the internal administration of chloride of calcium.

The boy, whose case came under my care last, had dangerous hæmorrhage from a deep cut one inch in length on the plantar surface of his right foot, between the fourth and fifth metatarsal bones. The cut was the result of his having stepped on a piece of glass the previous evening. The wound, which bled considerably, was first washed and dressed by his mother. It continued to bleed all night and next morning the mother, becoming alarmed, had the child carried to my house. There was then steady capillary hæmorrhage, the blood showing no tendency to natural thrombus formation. The wound was cleansed with hot carbolic lotion 1 in 40 and cautiously examined to see if it contained glass or other foreign body. Knowing that he was of a hæmophilic stock I did not stitch the wound for fear of setting up further bleeding. Instead I applied a pad of sterile gauze, boric dusting powder, and firm compression by means of a bandage, and at the same time elevated the limb. The dressing, however, became saturated in a quarter of an hour; gauze soaked in 1 in 1000 adrenalin solution was then applied and the leg was kept elevated for three hours. This considerably lessened the flow and the boy was removed home. In a few hours the oozing was again serious and a fresh adrenalin gauze dressing was applied. This had to be repeated during the night. On the second morning after the accident the boy complained of much pain and the oozing of sanguineous fluid was considerable. On the third day his temperature rose to 102° F. and the wound had evidently become septic. The foot was much swollen round the wound, the tissues in proximity looked unhealthy, while the oozing still went on. Iodoform gauze soaked in adrenalin was packed into the wound but this just seemed to dam back the blood, causing it to penetrate into the surrounding tissues. When this plug of gauze was removed the pressure of the surrounding tissues caused the collection of blood to spurt out. A small drainage-tube was then inserted in the centre of the gauze but the pressure necessary to prevent external oozing caused such pain that it had to be withdrawn.

By this time the boy was getting very anæmic and the prognosis was undoubtedly grave. Having procured some extract of ovarian substance prepared from the sheep, by Messrs. Burroughs, Wellcome, and Co., I commenced to give him two and a half grain doses thrice daily. At the same time the local treatment of the wound was continued,

¹ Clifford Allbutt's System of Medicine, vol. v., p. 553.

² Stockman in Gibson's Medicine, vol. ii., p. 28.