June 11th. I removed the second catheter, and introduced No. 8, through which sixteen ounces of the same offensive matter escaped (under the microscope, composed of albumen coagulated, blood-corpuscles, and pus-globules in large quantities). Before the operation on this day, the pulse, from 135, temperature 100½, fell to 115, and temperature 99½. She asked for some chicken and a glass of wine. By careful manipulation, the last catheter could be introduced the whole length, twelve and a half inches, and seemed to traverse the region of the liver in the direction of the left kidney, so far as I could judge by trials at this time and afterwards, without any pain, except at the opening through which the catheter was passed.—9.30 P.M. She was in a calm sleep, and had taken a mutton-chop and glass of wine for supper. On this day, for the first time, she expressed a hope of recovering, and of once again seeing her children.

June 12th. Nine ounces of the same kind of offensive matter escaped. The tongue was clean, and the bowels acting regularly. Pulse 109; temperature 99. The appetite was improving.—9 P.M. I withdrew the last catheter, which was obstructed, and introduced a No. 12. Sixteen ounces of the most offensive matter passed—twenty-five ounces in the last twenty-four hours. She felt better, and free from pain of any kind. She felt hungry, and wanted her supper, which she wished to be cold roast-beef and bread and butter, with a glass of wine. I almost invariably gave a glass of wine before the withdrawal of the plug from the catheter, both morning and evening. At this date, I noticed that the matter, after it had passed into the utensil, had a more flocculent appearance, as though the internal lining of the abscess were beginning to detach (under the microscope, it presented all the characters of albumen). Pulse quick, 130; temperature 100.

June 13th. She had not had so good a night; had slept about four or five hours. I drew off at 11 A.M. twelve ounces, at 9 P.M. ten ounces. Pulse 120; temperature 100. She took her food and wine with a zest.

June 14th. She had had a good night. At 11 A.M. I drew off ten ounces, in the evening three ounces, not so purulent, but having a yellowish brown colour, and less offensive. On this day, we measured her waist, and marked a reduction of rather more than eight inches in the circumference. Her friends were struck with the improvement in her appearance.

June 15th. Four ounces and six ounces passed. Pulse 100; temperature 99. She now looked forward to seeing her husband again, and her children, who were to come and see her one at a time. She continued to improve during the next five days. On the 21st, there was so much pain in the bowels, particularly the right side, with disposition to vomit, accompanied with great prostration and coldness of the lower limbs (no diarrhoea), that I began to fear perforation of the abscess into the peritoneum or intestine. She could not bear the slightest pressure. Only one ounce of yellowish bilious-looking matter passed through the catheter in the morning, and three ounces in the evening, of a like character. I ordered her to take ten minims of chlorodyne every half-hour, and sparkling Burgundy as freely as she wished during the day. After the fourth dose of the chlorodyne, she expressed herself better, and inclined to sleep.

June 22nd. She passed a most offensive greenish yellow motion from the bowels, very much resembling the matter passing from the catheter in her side. She was evidently better, and again inclined to take nourishment. The pulse fell from 144 to 99 during the day, and the temperature was 98. Six ounces and a half only of flocculent yellow matter passed during the last twenty-four hours.

June 23rd. She was much the same.

June 24th. She had had a bad night; complained of pain in her head, and described it "as though it ran up from her belly".—10 A.M. I drew off eleven ounces and a half of greenish-looking matter (with little if any smell), by which she seemed relieved; five ounces and a half ounces in the evening.

June 25th. She had vomited in the morning about three ounces of most offensive matter, in appearance very much like matter from the abscess. As there had been no action of the bowels since the 23rd, I ordered her a soap-and-water enema, which brought away a copious evacuation of most unhealthy faeces. From this time onwards, with occasional slight interruptions, she continued to progress. The discharge from the abscess gradually diminished, and by the end of August little else than pure bile flowed from the wound; so that on September 5th I withdrew the catheter entirely, and on the 10th of the month she returned to her native village. During the last month or five weeks, she gained flesh rapidly, and, when she left the hospital, must have weighed many pounds more than I had ever known her to do before. Visitors were asking if Conel could be the same woman. The total amount of discharge by measure was 558 ounces during the fourteen weeks she was a patient in the hospital. The only medicine taken

regularly during the last seven weeks was vinum ferri in teaspoonful doses three times a day.

I place this case on record as the only one that has occurred in my practice, and one of the few that have been published, where the success was so decided and the prospects so unpromising.

ADDITIONAL REMARKS ON A NEW MODE OF HOSPITAL CONSTRUCTION.*

By HENRY GREENWAY, M.R.C.S., Plymouth.

[Continued from BRITISH MEDICAL JOURNAL, May 11th, 1872.]

PATIENTS will require practically (on account of the two corridors) a much larger space than they could do with in a general ward, which increase partly makes the plan more costly. In comparing cost, however, advantages must be considered; namely, those already mentioned in my former paper, and there would be fewer deaths and more rapid recoveries; and I maintain that I give more than a *quid pro quo*. It should be remembered that many existing hospitals, in consequence of decorations, etc., cost as much or more than the estimate for my plan.† Besides, if the adoption of my plan be the means of saving life, extra cost, if within reasonable limit, ought not to be regarded. It would be just as idle to compare the cost of a chronometer with that of a common watch not to be depended on. Extra cost of administering would be very small. Of course, the patients could not be attended to with such rapidity as in a large ward, where the nurse or surgeon walks from bed to bed. But, after all, the main point is—What is best for the patient? I also consider the plan of having patrols will tend to increased watchfulness on the part of the nurses, just as a sentry is more alert while pacing his beat. There would be no difficulty in the matter of ventilation. The compartments being made of glass, it will be seen when they require to be washed.

The cases *specialy* requiring this plan of hospital are—wounds, whether caused by operation, accident, or disease; infectious diseases, and obstetric cases. Thus cared for, it is believed that hospital erysipelas, pyæmia, and gangrene (the pests in the surgical wards of our existing hospitals) would seldom or never occur, and would not spread through the building, as the wound of one patient would not be exposed to air tainted by the wound of a neighbouring patient, and the compartments themselves would not be a source of evil. It is believed that all wounds (some more than others) injuriously affect the air of a room either immediately or ultimately, if the walls be porous, and that they (the wounds) are very prone to absorb the organic particles thus suspended.

In a general medical ward some patients suffer, and even die, by being exposed to the same ventilation and temperature which may be considered necessary for other patients. This would not occur in my plan of building, where the ventilation and temperature of the different compartments may be varied as circumstances may require. With complete isolation there will be the chances of a patient, not considered seriously ill (and therefore not specially watched), but taken suddenly worse, being unable to summon the nurse by bell, or of the emergency being unnoticed by his neighbour, or by the nurse when casting her eye through the range of compartments, or even when acting as patrol; all this might possibly but very improbably happen. On the other hand, there is the *certainly* of patients, congregated in a general ward, occasionally proving hurtful to one another; and there is, in any form of building, the chance of negligence on the part of the nurse. I have said that patients in various compartments may require air of different temperature. This want can be economically met by placing on or removing from the hot-water pipes felt jackets. As a further means, already adopted, for regulating the warmth of the patients, blankets may be added to or withdrawn from the bed.

My plan of hospital construction has, by some surgeons, been considered unsuitable for connection with a medical school, on account of the inconvenience which students would suffer when following the surgeon from one compartment to another. My reply is, that the primary object of a hospital should be the *patients' welfare*, and whatever interferes with the attainment of that must yield. Once let the public imagine that any hospital, or portion of one, deemed perfect for cases (especially wounds) requiring isolation, and therefore tending to save life, is objected to by a surgical staff on the score of its being inconvenient for students, we may be quite certain a cry will be raised demanding the

* The result of discussions on my former paper. The manuscript, together with drawings and model of the proposed hospital, were placed in the Annual Museum of the British Medical Association, August 1873.

† The estimate, per bed, in 1871, was £150. It would now, most probably, be somewhat higher.

utmost that art or ingenuity can provide for saving life, and we might hear of the establishment of hospitals apart from medical schools. I am quite aware students must be taught, but that can be done by making a rule allowing only a limited number to visit each patient, the number of patients for each student to be decided on according to circumstances. The result, in an educational point of view, would be good, and I think the plan should be adopted in all forms of hospitals. At present, a crowd of student's "walk the hospitals" and obstruct each other's view at the bedside, and, I fear, a large number go into practice with little else than book-knowledge. A few well observed cases at a time would prove far more useful than the hap-hazard information gained in a throng over a number of patients. With the most perfect form of hospital there will still be required perfect administration. Great care should be bestowed on the bedding and bedsteads; each surgical case should be provided with a separate sponge, which could be disinfected before being used on another patient; instead of sponges, charpie or fine oakum may be used, and then thrown away; nurses and dressers attending wounded cases should wear smooth waterproof overclothes, the sleeves to fit closely at the wrists, these clothes to be frequently cleaned; students engaged in the dissecting-room should either not attend surgical practice, or, if attending, should also be thus clad whilst dissecting; no dissector, working with exposed hands, should act as dresser in the hospital, or attend a midwifery case.

Construction.—At present, the inlet ventilating tubes of opposite sides are not designed to meet in the centre of the building. Probably it would be an improvement if they were made to pass transversely through the building, and perhaps project a foot or two on one side, the projecting portion to be perforated. In the event of high side winds, their force would then pass completely through the tubes, from one side of the building to the other, without unpleasantly affecting the compartments; and the projecting ends would act like "wind-sails" by catching a fore-and-aft breeze, thus increasing the circulation of air in the tube. I would also suggest a second inlet ventilating tube for each compartment, to pass across the ceiling of the corridor and open into the compartment, over the doorway. I think a downward current of cool air would mix with the upward current from the floor. Either of them could be shut off if necessary. The compartments would be warmed with hot-water or steam-pipes, placed in the air-tubes underneath the floor-grating, or longitudinally, just above the floor. Iron guards would be placed around the interior of the compartments up to a certain height to protect the glass. Special appliances in the form of nettings should be used on the bedsteads of delirious patients in every form of hospital. As a substitute for glass, certain portions of the compartment walls might be made of sheet-iron, coated with white enamel. A receptacle would be placed in each compartment, as no infected patient should be allowed to visit the water-closet. Cotton-wool screens, and vessels containing a solution of permanganate of potash, or such like material, may be placed in the inlet ventilating flues. The air would thus be filtered and ozonised. Charcoal filters may also be placed in the lower end of the outlet flues to disinfect the outgoing air, the charcoal to be occasionally reburnt.

I am happy to say my plan has been very favourably received by several of the leading members of the medical profession in civil practice and in Her Majesty's service—Inspector-General Smart, of Haslar Hospital, having done me the honour to advocate, in the JOURNAL, its adoption in tropical climates, and also as an appendage to our existing hospitals in this country. The plan has also been approved of by many outside the profession. It now remains to be carried out, either as a general hospital or as a building for special cases.

CASE OF STRANGULATED UMBILICAL HERNIA: OPERATION: RECOVERY.*

By M. G. B. ONLEY, L.K.Q.C.P.I., Liverpool.

MRS. R., aged 73, had always, as long as she could remember, had a slight protrusion at the navel, and of late years had been much troubled with colic and constipation; otherwise she had enjoyed good health. On April 3rd, I found her suffering from sickness and constipation, and my attention was called by Dr. Caldwell, who was in attendance, to the umbilical hernia, which was of the size of a large hazel-nut; just above this, outside the umbilical ring, was a second protrusion. The patient could not say when this second lump came, or whether the hernia ever went back. Ineffectual efforts were made to reduce the hernia. On the following day, the sickness continuing, and there being great pain about the navel of a dragging character, as well as constant hiccough, it

was decided to operate, if the hernia could not be reduced, when she was under chloroform.

Chloroform having been administered, and it being found impossible to return the rupture, an incision was made over the neck of the upper tumour, and the stricture divided. This hernia proved to be a piece of omentum, and was easily returned. I now made an effort to reduce the other portion, which was evidently a small knuckle of intestine; failing in this, I opened into the cavity of the abdomen, and, with my finger nail, stripped the bowel from the interior of the sac; in doing this, an ovarian cyst (not previously noticed) was ruptured, and a large quantity of the contents found its way out. I immediately closed the wound with wire sutures, applied a good solid pad of dry lint, and supported the abdomen by means of broad strips of soap plaster. A draught, containing 5 minims of tincture of aconite and the same quantity of tincture of opium, was ordered to be taken every three hours, and brandy and milk to be given every half-hour in small quantities.

She did very well, never having any return of the sickness, and the bowels acting naturally the second day after the operation. On the 6th, I removed the lint and plaster, and found the wound free from supuration and apparently healed by first intention. On the 11th, the eighth day after the operation, I removed four of the six sutures, and the wound, as I thought, was firmly healed. During the night, a large quantity of viscid fluid escaped from a small opening in the centre of the wound; this continued to flow till the 17th, and then ceased entirely; the remaining sutures were removed a few days afterwards, and since that time she has continued to do well. The ovarian tumour seemed at first to have been stimulated to increased growth; but, for the last few weeks, it has become, if anything, slightly smaller. The rupture is now of greater size than before the operation, but is readily kept in its place by a truss, which she has orders to wear constantly.

OBSTETRIC MEMORANDA.

THE ANTICIPATION AND TREATMENT OF POST PARTUM HÆMORRHAGE.

THE contributions upon this subject of Dr. Ewing Whittle of Liverpool, and Dr. Atthill of Dublin, are so full of interest to the medical profession, and of so valuable a character, in respect not only of the signs by which *post partum* hæmorrhage may be expected, but also of some of the means of checking or averting this fearful condition, that the readers of the JOURNAL must indeed be thankful to these gentlemen for their excellent observations. It has been my sad lot, through a practice of forty years, to witness a fatal issue in three or four cases of uterine hæmorrhage; while, in many other cases, I have realised the value of ergot administered both before and after the expulsion of fœtus and placenta.

And, as pointed out by Dr. Atthill, I have seen the advantage of the cautious use of the forceps in cases marked by uterine fatigue or general exhaustion of the mother's power. But there are other modes of treatment, upon the actual occurrence of large hæmorrhage, which seem to me to be deserving notice, especially as, in such conditions, the obstetric attendants cannot safely wait for the effects of ergot. I refer to cold affusion over the face and abdomen, as affording a powerful stimulus to uterine contraction; and I am confident that I have seen several lives saved by this proceeding, under circumstances which would, from their urgency, admit of no other practice.

At the same time, from actual observation and experience, I must admit that this measure should be adopted with care and judgment, as the prolonged application of cold to the surface might set up pneumonia or some other visceral inflammation, while the hasty movement of the patient for the application of dry clothing may induce a return of hæmorrhage.

Dr. Whittle and Dr. Atthill do not furnish us with their views and experience upon the practice of the direct application, to the interior of the uterus, of the diluted solution of perchloride of iron, either by the syringe or the use of a proper sized saturated sponge, with the object of producing ready and firm coagulation of blood, and further, by means of the sponge, stimulating to increased contraction. Perhaps like many others in practice, I have no experience of this remedy; and, accordingly, I should receive most thankfully any suggestion upon this point of practice, which may come from those whose experience and observation give weight to their opinions.

I believe that many will agree with me, that no so deep and heavy responsibility attaches itself to any employment as is found by him who engages in obstetric practice—a responsibility, which in kind and degree is wholly unknown to those who are outside the medical

* Read before the Lancashire and Cheshire Branch.