On March 16th a blood examination gave the following: Haemoglobin, 55 per cent.; red blood cells, 3,280,000; white cells, 8,000; polymorphs 54 per cent., small lymphocytes 44 per cent., large lymphocytes 2 per cent.

The first count showed a high-grade secondary anaemia with a moderate leucocytosis, probably a post-haemorrhagic one; the second, with a higher anaemia, appeared to show a relative lymphocytosis.

Washings from the rectum yielded a thick deposit of pus; epithelial and connective tissue cells were obtained, and a few *Entamoeba coli*.

From a swab of the rectal mucus *B. pyocyaneus* was obtained in almost pure culture, and a vaccine of this was administered. Although *Entamoeba coli* is now generally held to be innocuous, yet, as some authorities hold that all intestinal amoebae are potentially pathological, he was placed on Fowler's solution by Dr. Mitchell Stevens.

The amounts of blood passed were quite small, but as the anaemia was increasing and he appeared to be steadily going downhill, with Dr. Mitchell Stevens's permission I decided to perform appendicostomy with a view to securing a thorough flushing of the whole colon, and this I did on March 16th, although his condition appeared so bad that my house-surgeon did not expect him to return from the theatre.

He was washed out from the appendicostomy opening daily with saline, and from then on steadily improved; indeed, the change from the condition of extreme pallor and emaciation was remarkable. In a few weeks his face had filled out and his colour had improved, and he expressed himself as feeling well. There were three factors that may have contributed to the result—the administration of arsenic (which may have got rid of the amoebae), the *pyocyaneus* vaccine, and the more thorough flushing of the colon by means of the appendicostomy.

On June 26th I attempted the closure of the colostomy by Coffey's method. Owing to the presence of much prolapse and a very considerable spur the operation was difficult. Every attempt was made to get a thorough invagination, several tiers of catgut being used to secure inversion of the bowel wall, and ample drainage was provided, but four days later faeces came through the drainage tube, which passed down to the peritoneum. This, I think, was due to angulation and the presence of the spur, which prevented the onward passage of intestinal contents into the distal segment. At the present time some faecal matter is passed naturally, but most comes through the abdominal wound, and a further operation may be required to close this. In other respects his condition is very satisfactory. A blood examination made July 20th gave: Haemoglobin 65 per cent., red blood corpuscles 4,500,000, white blood corpuscles 8,000—polymorphs 60 per cent., small lymphocytes 37 per cent., large lymphocytes 1 per cent., eosinophils 1 per cent., and basophils 1 per cent. The only organisms found in the stools were *B. coli*; the *entamoebae* and *B. pyocyaneus* had disappeared.

These two cases differed from tropical dysentery in that there was no ulceration, and neither the bacillus of Shiga or the *Entamoeba histolytica* could be found. There was a remarkable absence of pain in each. The mucous membrane presented a uniform granular appearance, which in the second case was observed to extend from the rectum to the splenic flexure, and which probably involved the whole lower bowel. This case was much the more severe, and we did not expect him to recover. I attribute a large share in the result to the appendicostomy, and if I had a similar case to treat which did not respond to medical methods I should perform appendicostomy, and place a large flatus tube in the rectum, avoiding opening of the bowel, which in each case was done for diagnostic reasons, owing to the difficulty in investigating the colon higher up with the sigmoidoscope.

I may conclude with a few remarks on Coffey's method of closure of colostomies. I have tried this on four other occasions. In three, after some suppuration of the abdominal wound, a satisfactory closure ensued. In one a further operation was required. It is perhaps a safer operation than resection, but where there is considerable prolapse and extensive spur formation, it is difficult and unsatisfactory. The obstacle of the spur may be got over to some extent by the use of Balfour's rubber tube for a week or two before operation, but even then I think that the necessary invagination of the antimesenteric border is likely to cause distortion and angulation of the gut. In the second place, it does not seem to be in accord with the first principle of intestinal surgery—namely, that secure union depends on the apposition of serous surfaces; as the operation is extraperitoneal this cannot be obtained. There is, however, probably less risk to life, and in suitable cases, with little prolapse, it is worth doing. China clay emulsion was also given during the later part of the treatment, but he was then recovering and its effect could not be judged.

Since the above was written, I am informed that the first patient suffered a relapse, but is now well again.

The second patient has also had a slight relapse, again passing a moderate amount of blood and mucus, and is at present being treated at his home by injections of an autogenous coli vaccine. I hope shortly to be able to close his colostomy.

NOTE ON THE INTRAPLEURAL PRESSURES IN ARTIFICIAL PNEUMOTHORAX.

BY

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I SHOULD like to call attention to a feature which has not, as far as I am aware, already been noted and which deserves the consideration of those called upon to supervise the treatment of artificial pneumothorax cases. I refer to the alteration which takes place in the intrapleural pressures with a change in the position of the patient.

This fact was first observed in the case of a patient in whom a right-sided artificial pneumothorax had been established. The patient always experienced a desire to cough when lying on the left side (the position in which all former refills had been carried out) and requested to be allowed to lie on his back. Puncture was made in the anterior axillary line in the fourth interspace and the manometer recorded pressures of $-2+5$, whereas the pressures reached at the previous refill fourteen days before were $-2+4$. Fluid was suspected, but the patient had been unconscious of splashing and physical examination had not suggested its presence. On rolling the patient into the left lateral position the pressures at once fell to $-4+2$.

Subsequent cases were investigated to ascertain the constancy of this variation, with the results shown in the table.

Position of Artificial Pneumothorax.	No. of Refill.	Pressures before Refill.		Quantity of Gas Introduced.	Pressures after Refill.	
		Lateral.	Dorsal.		Lateral.	Dorsal.
Case 1: Right-sided, complete, with a small quantity of fluid in the pleura	18	$-2+4$	$+2+6$	c.cm. 100	$\pm 0+5$	$+5+12$
	19	$-2+3$	$+1+6$	150	$\pm 0+6$	$+5+10$
Case 2: Left-sided	20	$-4-2$	$+2+5$	1,000	$+3+5$	$+8+12$
	21	-3 ± 0	$+2+7$	800	$+3+5$	$+10+12$
	22	$-1+1$	$+8+12$	700	$+6+8$	$+12+14$
	23	-2 ± 0	$+3+6$	700	$+4+8$	$+11+13$
	24	$-5-2$	$-2+5$	700	$+3+5$	$+4+10$
	36	$-2+7$	$+4+14$	100	$+10+17$	$+14+22$
Case 3: Right-sided, with fluid	7	$-8-2$	$-4+2$	500	$\pm 0+4$	$+2+7$
Case 4: Left-sided	18	$-3+2$	$\pm 0+4$	450	$+6+10$	$+8+12$
	19	-3 ± 0	$-1+2$	500	$+3+8$	$+6+11$
	20	$-4+2$	$-2+4$	500	$+6+10$	$+9+13$
	21	$-4+2$	$\pm 0+4$	425	$+6+10$	$+9+13$
Case 5: Right-sided	12	$-4+2$	$-2+5$	350	$-2+4$	$+4+8$
	13	-6 ± 0	$-4+3$	450	$-2+4$	$+2+8$
	14	-6 ± 0	$-4+4$	550	$-2+4$	$+3+8$
	15	-10 ± 0	$-6+2$	850	$-3+3$	$+2+6$
	16	$-8-2$	$-6+2$	600	$-2+3$	$\pm 0+6$

In the columns headed lateral the pressures are those taken with the patient lying on the side of the functioning lung.

Figures are not available to demonstrate the pressures in the erect posture, but, in the few cases in which this has been investigated, it has been found that the pressures approximate to those found in the dorsal position.

A consideration of the pressures in the above cases will show that there is a constant rise in the pressures when the patient is moved from the lateral to the dorsal position. The importance of this observation will be recognized when any attempt is made to re-establish a previous pressure. This obviously can only be done with certainty when the patient occupies the same position on both occasions. Emphasis must therefore be laid on the fact that any statement of intrapleural pressures must be accompanied by a statement of the position of the patient.

Further, while the amount of the rise varies not only in different cases, but in the same case, it will be noted that the pressures are frequently doubled. As refills are usually conducted in the position in which the pressures are lowest,

the subsequent rise must not be lost sight of in cases which show extensive cavitation, and in which there is a possible danger of rupture of the cavity.

No attempt has been made to explain or correlate the reasons for the alterations of pressures, but it is obvious that the weight of the heart, the abdominal support of the diaphragm, and the increased action of the opposite lung all play a part. That the alteration does take place is sufficient to warrant attention.

A CASE OF MEGACOLON.

BY

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THE following case presents many points of interest; amongst others, the colon was the largest of which I have seen any record.

A man, aged 32, was admitted to the Leeds General Infirmary in August, 1918, for distension of the abdomen and faecal incontinence. He was born with an imperforate anus, for which an operation was performed some twenty-four hours after birth. The rectum was opened at a depth of 3/4 in. from the perineum and the edges stitched to the skin. The subsequent history was one of continual trouble with the bowels. He never had his bowels moved without aperients or enemata, and even these did not prevent him having attacks of partial obstruction, for which he was, on several occasions, readmitted to the infirmary and relieved by vigorous treatment with enemata. After such relief he returned home, gradually to fill up again, and so on. Vomiting and pain were quite exceptional. His complaint was, as on this occasion, of enormous distension and difficulty with the bowels, and when this was at its worst he would get a form of diarrhoea with incontinence. He worked fitfully, having often to absent himself for treatment, and when at work he had constantly to be attending to himself.

On admission, in August, 1918, the abdomen was enormous, like that of a woman with the largest imaginable ovarian cyst; the parietes were tense, and had a glazed appearance. There was no visible peristalsis and no evidence of distinct coils. He was in no real distress except from the continuous oozing away of faeces. The rectum was found to be full of great hard masses of faecal material, and, though the anal margin felt rigid with scar tissue, yet it was possible to insert two fingers easily and without hurting him. I thought the condition was one of interference with colic action, as one sees in Hirschsprung's disease, but complicated by the possible interference with control of defaecation, owing to the anal condition.

I decided, therefore, to do a colectomy, but to empty the bowel to some degree in the first place by colostomy. In this, however, I was not very successful, for though he was much improved by the colostomy it was impossible to create a spur owing to the enormous size of the colon, and the opening very soon began to close. Consequently in November I removed the sigmoid and upper part of the rectum, together with the colostomy opening. The sigmoid was enormous, the two limbs being the size of an average male thigh, and the apex of the loop was beneath the liver. The wall was markedly hypertrophied. The same condition extended down into the rectum in its whole length, but above it ended almost abruptly at the lower end of the descending colon. Proximal to this point there was a little dilatation, but no noticeable hypertrophy.

I brought the cut end of the descending colon to the surface to act as a permanent colostomy, and stitched up the upper end of the rectum, which was about 6 in. across. In the ordinary way I might have tried stitching the two ends together, but owing to the suspicion under which the anal canal lay I decided the best interests of the patient would be served by a permanent colostomy.

I have seen the man frequently since, and he says he has never felt better in his life; he has lost all the features of autointoxication which were so marked before, and he has been at work continuously since. He has no inconvenience from the colostomy, for by careful dieting he can easily regulate his bowels so that they act once a day, and at a time when it is convenient for him to attend to them. Immediately after the operation considerable difficulty was experienced in evacuating the rectum; now he has no trouble with this at all.

The segment of bowel removed was 2 ft. 6½ in. long, 22 inches in circumference, and weighed 11 lb.

I have labelled this as a case of megacolon because I am not sure whether it should be classed as a case of Hirschsprung's disease, or as one of obstruction due to the scarring resulting from the operation for the imperforate anus. There has never been anything which one could call an obstruction at the anus since I have seen him, though, of course, the natural elasticity of the part was absent, and I could not satisfy myself of the presence of a sphincter. On the other hand, apart from the anus, the pathological appearances were exactly those of Hirschsprung's disease, and the existence of the condition from birth conforms to either alternative.

GASTRO-ENTEROSTOMY, AND SOME DIETETIC RULES.

BY

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As a confirmed gastro-enterostomist of some years' standing, I wish to express admiration for Mr. Paterson's lucid exposition, at a recent meeting of the Royal Society of Medicine, of the rationale of this operation, and my personal experience justifies the statement that this gentleman's verdict fits the bill as to the application and success of the procedure.

Also, I was deeply interested in reading Mr. Walton's dark roll of surgical iniquity, which I am sure will command profound study by all who are responsible for the efficient training of surgeons. At the same time, I do not wish to infer that, although I happened to escape from inclusion in above roll, I have not had my share of compensatory post-operative trouble, the principal one being a two-year plague of diffuse, dense, iodine peritoneal adhesions, some of which caused intestinal obstruction, with three deaths. The abandonment of iodine skin disinfection and the return to old friends, alcohol mercurial lotion, and careful adjustment of isolating towels in and around parietal wounds by Mr. Marmaduke Sheild's through-and-through retractor silk sutures, relieved a situation which was really becoming intolerable.

It is not my desire to occupy space in reiteration of what I have already published on this subject, further than to mention that anyone may peruse my ideas on the operation of gastro-enterostomy by referring to the *Lancet*, October 26th, 1912, and it is possible that the method therein described may now merit some attention.

I think it a duty to repeat that in my opinion the employment of clamps in gastro-enterostomy violates the rudiments of operative surgery, in that they entail a needless traumatic insult to the delicate visceral structures and a fatuous, if not culpable, obfuscation of potential haemorrhage from many important vessels which must be injured in the course of the necessary incisions. I have no hesitation, judging from the number of fatalities which occur from post-operative haematemesis, in craving the attention of surgeons to what I maintain is a preventable catastrophe, and moreover, I consider it a disgrace to surgery and a parody on human reason that the term "haemostatic through-and-through stitch" should ever have been countenanced in the surgery of the stomach. I strongly recommend anyone who has not time or nerve openly to tackle the dozen or so bleeding vessels which usually demand ligature before the insertion of the inner circular catgut suture to transfer such cases to a colleague gifted otherwise.

Reference to my paper "Operating to the clock" (*BRITISH MEDICAL JOURNAL*, December 21st, 1918) will probably remove the suspicion that I am of those who discount the importance of time, yet I wish to emphasize that I am unable to follow the mentality that admits, in gastric surgery, of the repudiation of the cardinal rule—see the bleeding point and tie it.

With all deference I beg of the authors of operative textbooks to give these remarks some reflection, in the hope that they may see their way to delete some of the ironies which now adorn their illustrations, and to bring a needle and thread into better perspective, with an artery forceps and ligature well in the foreground.

There is another item which has for years baffled my sense of comprehension—the inordinate haste to get these patients out of bed, and to mock their doubly lesioned stomachs by the early administration of solid food. The introduction of this—apart from direct and peristaltic traumatism, apart from the very negation of Hilton's law, and apart from the fact that it takes at least fourteen days for *restitutio ad integrum* of any solution of continuity in the human body—is a physiological anachronism, in that it induces the gastric glands to pour forth an abundance of acid secretion at the moment when the organ is extra-handicapped with an additional six-inch gastric sore, just when, by all the rules, an alkaline state is necessary for its salvation. Recently I was gratified to read that Dr. Moorhead, of Dublin, had called attention to this matter, and I hope his opinions will exact the consideration which they always deserve.

It has been my plan for many years, a few days after operation, to hand over these cases to the sister's personal care, with the injunction that they shall be kept in bed and