TABLE IV.—Results of Different Climates Compared.

	No. of Patients	Average Length of Residence.	First Stage.	Second and Third Stages.	Bilateral Affection.	Results.						
						General.			Local.			
						Improved.	Stationary.	Worse.	Arrest.	Improved (including Arrest).	Stationary.	Worse.
		Months.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
High altitudes	247	12.2	65.0	35.0	37.0	83.4	2.02	14.57	42.5	75.5	5.3	19.1
Sea voyages ...	65	1.6 (average of voyage)	63.0	37.0	37.0	77.0	—	21.56	7.7	53.3	10.7	33.8
Riviera... ..	210	9.0	59.0	41.0	36.0	65.2	10.06	24.80	5.9	36.6	17.8	45.6
Home climates	292	9.7	58.0	42.0	42.0	63.7	8.21	28.00	2.0	38.9	20.0	41.1

division, but they are also included under the improvement percentage. We see here that the Riviera comes out worst, except for a large number of arrests. Next we find home climates, then separated by an interval of 14 per cent. more of improved, and 12 per cent. less of worse, are sea voyages. The high altitudes again come out *facile princeps* in all categories with favourable percentages, nearly double these of the Riviera and home climates. Looking calmly at these results, it must be admitted that there is strong evidence in favour of high altitude treatment.

The table does not profess to be perfect, but, considering the number of cases included and the average length of residence, it affords some fair grounds of comparison.

A METHOD OF PERFORMING INTESTINAL ANASTOMOSIS BY MEANS OF DECALCIFIED BONE BOBBINS.¹

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THE principle of lateral anastomosis by means of decalcified bone plates, invented by Dr. Senn, is now recognised as a most valuable surgical procedure, both in intestinal and in stomach surgery. The following method of employing a decalcified bone tube, shaped like a cotton bobbin, is brought forward as another means of accomplishing the anastomosis. The advantages claimed for the method are:

1. Rapidity of execution.
2. Simplicity and ease of performance, only two continuous sutures being required.
3. The avoidance of leaving large plates in the intestine.
4. Security against leakage by the double continuous suture.
5. The certainty of having an adequate and immediately patent opening.
6. The avoidance of the danger of after-closure of the opening by securing continuity of mucous surfaces through the new channel.
7. The avoidance of making incisions in the visceral walls larger than just necessary to admit the tube.
8. The adaptability of the principle to (a) lateral intestinal anastomosis; (b) lateral implantation, as in ileocolostomy; (c) gastro-enterostomy; (d) pylorotomy; (e) end-to-end enterorrhaphy after enterectomy; and (f) cholecystenterostomy.

The operation is performed as follows. For the sake of example let it be supposed that it is required to connect the ileum to the sigmoid flexure of the colon, as was actually done in the first case related.

An incision of 3 inches was made through the parietes of the abdomen in the usual position for inguinal colotomy, a loop of the sigmoid was brought up and drawn between the fingers of the left hand, so as to empty it of blood and of in-

testinal contents, the base of the loop was then encircled with a piece of drainage tube, which was tied in one knot and clamped by pressure forceps. In the same way a loop of ileum was emptied and clamped, both loops being brought outside the abdomen. A large piece of aseptic gauze, wrung out of hot antiseptic solution, was then applied around the loops and over the abdominal wound, so as for the time being to shut up the abdominal cavity.

Fig. 1.—Showing serous suture applied around the posterior half circle.

Nibbed forceps were applied as guides to the ileum and colon where they were to be opened. Two 18-inch long continuous sutures, threaded on curved sewing needles, were ready; the outer, of silk, was applied half an inch from the place where the viscera were to be opened, first to ileum and then to colon alternately, the suture taking up peritoneum and outer muscular coat only, and each suture taking up about one-third of an inch of surface. The suture was commenced on the right, proceeding to the left, the tail end of the suture remaining long, and when the extreme left end was reached the needle was not unthreaded, in order to complete the suturing after the bone tube had been inserted, and the marginal suture completed.

Fig. 2.—Showing the marginal suture applied around the posterior half circle.

The viscera were then incised, the openings being just sufficient to admit the bone tube, but, before its insertion, the marginal suture, which may either be of chromicised catgut or of silk stained with aniline, was applied from right to left, uniting the posterior margins of the two visceral openings, the suture including mucous membrane, the tail of the suture

¹ Read in the Section of Surgery at the Annual Meeting of the British Medical Association, held at Nottingham, July, 1892.

being left long on the right and being kept threaded on the left. The tube was now inserted, one end being in the ileum,

Fig. 3.—Showing tube in position and the anterior part of the marginal suture continued around the circle.

the other in the colon. The marginal suture was then proceeded with around the front until the tail of the suture was reached; the two ends were then drawn tight, tied, and cut off short, thus uniting the mucous surfaces around the tube.

Fig. 4.—Showing the marginal suture tied and the anterior half circle of the serous suture completed.

The outer serous suture was then proceeded with half an inch from the marginal suture until the circuit was completed, when the two ends were drawn upon, tied, and cut off short. The sutures could not then be seen, and the anastomosis was complete.

Fig. 5.—Showing the bone tube *in situ* and the serous suture completed, the ends being left long to show where the knot has been tied.

If the ends of the gut have to be united after enterectomy the method is the same, the serous suture being inserted about one-third of an inch from the marginal one.

The two following cases prove that the method can be relied on in practice:

CASE I.—A man, aged 56, was sent to me by Dr. Scatterty, of Keighley, suffering from acute intestinal obstruction supervening on chronic bowel trouble of some months' duration. As the abdomen was distended, and vomiting had been present for some days, immediate operation was necessary, and laparotomy in the middle line was performed. The ascending colon, just above the cæcum, was found to be the seat of stricture, the growth fixing it to the contiguous parts. As the patient was unfit to bear a prolonged operation, the lowest part of the ileum was brought up and sutured to the surface, being opened and drained on the following day by the trocar, of which I published an account in the *BRITISH MEDICAL JOURNAL*, p. 65, vol. 1, 1892. Recovery was uninterrupted, and the patient returned home in a month greatly relieved, but with a fecal fistula. I received a telegram in another month to ask if he could return at once, as he had allowed the opening to close and his symptoms had returned. On dilating the fistula he was immediately relieved, and then he consented to what I had previously advised, that is, a

short-circuiting operation, which was performed in the way just described. Mr. Rutherford Morison, Mr. Chaffers, and Mr. Lawford Knaggs were present at the operation, in which I was assisted by Mr. Moyulhan and Mr. Walter Mayo. Recovery was uninterrupted, the temperature and pulse never exceeded the normal, the bowels were moved per anum the day following operation and every day subsequently. The wound healed by first intention, and the patient was up in a fortnight, and returned home in a month. Dr. Scatterty informs me that he is to all appearances in robust health, and that he has resumed his work.

CASE II.—This was a case of advanced cancer of the stomach, producing pyloric stenosis, in which gastro-enterostomy was performed with perfect success so far as the operation was concerned, although the disease was too far advanced to long retard the inevitable issue. The patient, sent to me by Dr. J. Corrie, had been vomiting daily for four months, and had lost from 2 to 3 stones in weight during 6 months. At the operation the stomach was so fixed by the tumour that it added to the difficulty, and the tube had to be inserted within half an inch of the growth. The operation was performed as described in the case of intestinal anastomosis, except that the stomach was not drawn out but was packed round by means of flat sponges. Regurgitation of bowel contents into the stomach, as previously noticed by Mr. Barker and myself in other cases, produced a feeling of nausea; but the vomiting was relieved, and the patient was able to take a fair amount of food after the first few days. There was an entire absence of distension, and the temperature and pulse rate were not increased. The wound healed by first intention and the sutures were taken out on the seventh day. He was able to sit up in bed a little, but his power of assimilating food seemed to be lost, and he neither regained flesh nor strength although his pain was relieved. He succumbed from exhaustion at the beginning of the third week. Dr. Chadwick, honorary pathologist to the infirmary, who conducted the necropsy, told me that in opening the abdomen he could not have told that any operation had been done, the peritoneum being in such a smooth and healthy state. The union between the apposed viscera was very firm and the sutures were buried. A good opening with smooth mucous margins existed between the stomach and jejunum. The specimen shows how very efficiently the bobbin connects the viscera, and almost leads one to the belief that the marginal suture might be sufficient if supplemented with a few Lembert's sutures so as to secure peritoneal apposition for some distance from the opening.

The diagrams executed for me by my friend, Dr. McGregor Young, will, I trust, serve to show the method suggested, and the models handed round will, I hope, illustrate the mode of procedure. The bone tubes—which have been made for me by Messrs. Maw, Son, and Thompson—are shaped like

Fig. 6.—Diagram to show shape and measurements of tube.

a cotton bobbin, and have the following measurements for ordinary use: Total length of tube, $\frac{3}{4}$ in.; greatest diameter of ends, $1\frac{1}{8}$ in.; inside diameter of tube, $\frac{1}{2}$ in.; outside diameter of tube, $\frac{5}{8}$ in.; height of rim, $\frac{5}{8}$ in.; width of rim, $\frac{1}{2}$ in. I have had some made larger and others smaller, and the tube employed for cholecystenterostomy has its barrel only as thick as a No. 16 English catheter. In some cases the oval shape may be preferred, the principle being still the same.

PRESSURE ON SPACE.

Notice to Correspondents and Authors of Communications.

In view of the great and constantly-increasing pressure on our space, we would urgently request correspondents and authors of communications to assist us in endeavouring to place their views before our readers by condensing their communications to the utmost extent.