bladder. Next they were dragged well up into the wound, the bladder following, a stitch was passed through the sheath of the rectus and the muscle itself, then transfixing both cords, the needle was brought out through opposite rectus and the fascia covering it. The suture was tied firmly, and several others passed through the same structures above and below, so that the two cords were embedded for a considerable distance in the substance of the approximated recti. Skin sutures were then inserted, and the wound closed and dressed. At the time of the operation I was somewhat disappointed that the bladder did not seem to yield sufficiently to traction, and consequently, not expecting a favourable result, I made no vaginal examination for a week; when I did, I was agreeably surprised to find that the soft mass which had previously filled the vagina had now entirely disappeared. This case I examined quite recently, and it is still in as good position as immediately after operation.

The next case was not quite so successful; when recently examined there was a distinct though moderate recurrence of the cystocele. Five others were operated on with results equal to the first case, and then came a check. In searching for the cords in rather a stout woman but one could be found sufficiently strong for use—the right—the left being a mere thread. Still worse was the ninth case, in whom neither cord could be discovered, although the patient was a spare woman. The urachus was conspicuously present, but broke off on my attempting to utilise it. Clearly I could not wisely persevere with an operation that was based upon structures liable to so much anatomical uncertainty.

3. *By Peritoneal Flap* (see Fig. 8).—This improvement on the above method is performed thus. After the usual incision through skin, fascia, and rectus, the sides of the wound are well separated, and the hypogastrics looked for and defined. Midway between the pubes and umbilicus the peritoneum is divided transversely for about $1\frac{1}{2}$ inch, the mid-point of the incision corresponding with the middle line (1.....2, Fig. 9). From each end of this incision the peritoneum is divided with a pair of scissors downward and outward toward the sides of the bladder (1.....3 and 2.....4, Fig. 9), just outside the cords. (The flap thus formed is attached to the back of the bladder, and includes the hypogastrics and the urachus.) By dragging on this flap the bladder is drawn upwards, and is retained in position by sutures passing through the flap, recti muscles, and fascia. In this way one is independent of the hypogastric cords, though, if present, they help to strengthen the flap.

4. *Flap Operation with Separation of the Bladder in Front.*—The flap operation proved, on the whole, successful, but in 3 cases out of 14 the cystocele was not completely reduced. It was evident that more elevation was required. With this object in view I have in subsequent cases passed my hand behind the pubes, and completely separated the bladder in front and laterally. After this the bladder can be well drawn into the wound, and fixed at whatever level is considered advisable.

Up to December 31st I had operated on 25 cases by No. 4 method. Of these, 19 have given me absolutely favourable reports, expressing themselves variously—as “never better,” etc. Many of them I have examined digitally, raised on the elbow and when coughing. Three I have lost sight of, and one was, I believe, a failure, and was operated on by another surgeon. Three still complain, two of a persistence of the feeling of down-bearing, though on examination I find no sign of prolapse, and they are not free from symptoms of hysteria. The other complains of pain and frequency of micturition, and she has several times had a recrudescence of the cystitis from which she had long suffered. There have been no deaths.

THE INFLUENCE OF LOCALITY ON THE PREVALENCE OF MALIGNANT DISEASE.

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THE following extracts from my paper read at the annual meeting of the British Medical Association in London, 1895, gave very much the same evidence (facts) of the extra prevalence of malignant disease in river-watered valleys, as de-

scribed in Dr. E. N. Nason's paper in the BRITISH MEDICAL JOURNAL of March 5th. Moreover, the village in the Hampshire chalk valley I have described has alongside the main street a tributary to the river Test. This rivulet, when the local springs are low, disappears annually, and probably carries into the wells by “soakage” deleterious deposits to the drinking water.

In a paper read at the annual meeting of the Association in Bournemouth, 1891, I gave the history of a farmer's family living in a good substantial house at the terminal end of a long straggling village, containing about 800 inhabitants, situated in a chalk valley. The main road only divided the farmhouse from the village schoolhouse, a narrow strip of garden divided it from the churchyard, close to this on the other side was the vicarage, and near and below that was a labourer's cottage. Each of these dwellings had its separate well for drinking water sunk into the subsoil of chalk. There is also a rivulet running close to these dwellings part of the year. In all those dwellings I have seen and attended cases of cancer more than twenty years ago, and the successor to my practice there has attended and known of other cases of cancer since then at the same farmhouse in members of different families from those who previously occupied the same.

In the surrounding villages on the hills, where rain water from ponds is used much more than well water, the cases were not so prevalent. These ponds are kept clean when required for domestic purposes, fenced in to keep out cattle, and are kept free from vegetation. They supply all drinking water when the springs in wells are low. In the valley well water is almost entirely used for drinking purposes, and these wells are made in solid chalk.

The glandular system is more fully developed in women than men, and this may be one of the causes of the greater frequency of cancer in women. Women are habitual water drinkers; they suffer from habitual constipation, perhaps partly from their sedentary lives, and drinking hard water increases this trouble. Would not this suggest another cause for the greater frequency of cancer in women?

The cases among the men in the chalk valley, to which I have referred, and frequently following that common trouble there—constipation of the bowels—chiefly involved the intestinal tract, and were mostly cases of cancer of the rectum.

As Vice-President of the Dorset and West Hants Branch of the British Medical Association, I was called upon to open a discussion at their summer meeting held at Bridport in the year 1895, and I chose for discussion the question, Is Cancer a Waterborne Disease? with special reference to its frequent occurrence in chalk valleys and districts, containing periodical springs and rivulets. I then referred to the reported rapid increase of cancer in America, and suggested that it would be well if we could ascertain if it was of greater frequency there in chalk and limestone districts.

I also referred to this disease in grazing animals, and to the fact that horses in Australia suffer from swamp cancer in the axilla from grazing on stagnant marsh grass, the tumours growing to an enormous size. I also mentioned the fact of cattle and pigs wallowing in the shallows of sinking rivulets, and their excretions polluting the same. I spoke of a common practice in the bacon-producing counties of Hampshire and Wiltshire, of labourers eating their bacon uncooked, and of frugal farmers having been known to do the same to avoid waste of the fat in boiling. Is it possible, then, that cancer germs can find temporary lodgment and be reconveyed from animals to man? The question whether the hardness of water from lime deposits may have anything to do with forming a cancer matrix in them, and disorganising the absorbent and excretory glands, seems to be nearer the mark, and worth our consideration.

At our discussion at Bridport, Dr. McLean, of Portland, said that in making reports for the County Hospital, he noticed larger numbers of cases from the same places, and he thought it would be well for medical officers of health to make a note of this in their returns, and investigate those localities where the cases predominate. Mr. Parkinson, of Wimborne Minster, thought that the Government return should have a special column for cancer cases.

If Mr. Parkinson's suggestion can be adopted, and in the future Government returns be made to notify the nature of the subsoil, with special reference to the hardness or softness

of the water in localities where cancer cases are mostly met with, it would guide us in investigating the cause of this increasing and terrible malady. It is the fashion to drink table and aerated waters of all descriptions now, both in this country and America; it is possible that much of it is procured from limestone and chalk districts. Boiling the water in tea and beer making throws down much of the lime with deleterious deposits, and I think preference should be given to drinking water so treated, especially in chalk districts where clean pond and rain water is not always at hand, in fact this should be boiled also; and for all bottled waters it should be taken from springs not so impregnated with an excess of lime.

I have raised these questions arising out of my observations extending over many years, and out of records supplied to me by Mr. Gilmour, who is now practising there, of the extraordinary occurrence of cancer in that Hampshire chalk valley, hoping that other observers may trace the sources and aggravating causes of this fearful disease, and so endeavour to check its rapid increase.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

THE TREATMENT OF LEUCOCYTHÆMIA.

In a boy with exceedingly large spleen and with marked, though not quite so extreme, an excess of white cells, who had been under treatment for eighteen months at other hospitals and at St. George's Hospital without relief, the inhalation of carbonic acid has been rapidly followed by a considerable reduction in the size of the spleen, and with a remarkable improvement in the general condition. The method is simple. Pure gas is easily obtained with the help of a Kipp's apparatus (supplied by Messrs. Baird and Tatlock, of 14, Cross Street, Hatton Garden, E.C.) and of a wash-bottle, in which it is made to bubble through a 20 per cent. solution of potassium carbonate to free it from all traces of hydrochloric acid, and from which it may be inhaled by means of a long india-rubber tube. The rate of delivery can be easily gauged by watching the bubbling of the gas in the wash-bottle, and easily regulated down to a moderate strength by adjusting the tap of the gasogene. The latter is charged with chipped marble in the middle bulb, and with a 1 in 4 solution of strong hydrochloric acid to fill the lower bulb and to rise into the middle bulb sufficiently high to submerge the marble.

In order to obviate any respiratory complication, I have administered oxygen simultaneously, likewise in a very slight stream through another tube connected with the oxygen supply. The duration of the inhalations did not at first exceed three minutes, but I now give seven and ten minutes' sittings several times a day, and I combine with the inhalation a preliminary application of galvanism to the spleen for five minutes before, and during the whole sitting. There has never been any cyanosis or feeling of discomfort at the time or afterwards.

A second case, that of a young man with less extreme splenic enlargement but with very great increase of white cells, also showed general improvement, but the diminution in the size of the spleen has hitherto been only slight.

The object of the early publication of the encouraging results obtained so far is to secure for those whose life may be at present in the balance the possible benefits of a method which is harmless and which might perhaps in some of them prove successful, even at the last stage. Its trial is also invited in the other varieties of leucocythæmia and in Hodgkin's disease, as well as tentatively in splenic, in simple, and in pernicious anæmia, and in malarial splenic enlargement, although in the latter affections the same rational indication does not obtain.

It is hoped that the subject may be brought up and the method demonstrated at the coming meeting in Edinburgh.

Curzon Street.

WM. EWART.

ON THE USE OF CARBO-SAPOL IN THE DISINFECTATION OF THE SURFACE OF THE BODY.

WHILE mechanical disinfection by scrubbing (preferably, as I pointed out recently in the *BRITISH MEDICAL JOURNAL* with pumice-stone soap) is of the first importance in the sterilisation of the surface of the body, we cannot altogether do without the subsequent use of some chemical antiseptic. Different surgeons use different substances, many preferring, especially in the operating theatre, Kelly's rather complicated plan of a solution of permanganate of potash, followed by a saturated solution of oxalic acid. For some time I have been using a combination of 50 per cent. carbolic acid (Calvert's No. 5) with 25 per cent. yellow soap (Tennant's), and 25 per cent. soft black soap. These ingredients (the yellow soap being in thin shavings), when put into a wide-mouthed bottle, heated gently in a water bath until a clear solution is obtained, and then strained through lint, give a clear brown fluid, which Mr. Macmillan, chemist, who first made it up for me, has not inappropriately termed "carbo-sapol," the name indicating exactly its composition.

Carbo-sapol mixes well with water, forming an oleaginous solution which yields an abundant lather when the hands are washed in it, and leaves them when dried soft and glossy. In fact, I find it very much less irritating than the ordinary carbolic lotions, which have a tendency to crack the skin. I employ a 1 per cent. solution of it for disinfecting the hands and the skin of the patient after they have been cleansed with the pumice-stone soap, and then finally a 1 to 2,000 corrosive solution is used. This procedure, I consider, renders the skin quite surgically clean.

During operations I find carbo-sapol of great service in connection with the cleansing of one's hands and the sponges. As is well known if one washes one's hands in corrosive solutions, the presence of any blood forms a compound which stains the skin and nails in a very unpleasant way. Sponges, natural or artificial, with blood in them are also discoloured. I find that a preliminary washing in carbo-sapol lotion (1 per cent.) gets rid most satisfactorily of the blood, after which the 1 to 2,000 corrosive lotion should be used, as the carbo-sapol leaves the hands too slippery for handling instruments; in fact, it behaves very much as lysol does, and I have quite given up the latter since I commenced the use of the carbo-sapol, the composition of which I know exactly, and of whose cleansing powers I have formed a high opinion.

Glasgow.

GEORGE T. BEATSON.

THE TREATMENT OF PNEUMONIA BY DIGITALIS.

DR. EUSTACE's notes in the *BRITISH MEDICAL JOURNAL*, June 25th, 1898, p. 1656, on the above and the successful results therefrom are corroborated by my own experience. I have on several occasions adopted that course and have been invariably satisfied. As a rule, I add tr. ferri perchlor. to the digitalis, usually ℥xv of the former to ℥xxx of the latter every three hours. One case especially recurs to my mind. A lady of robust, not to say florid, type was attacked by pneumonia. On the third day her temperature was over 105° , and delirium was setting in. I at once placed her on the combined iron and digitalis, and the temperature gradually fell; arterial tension subsided, and the patient made an excellent recovery. I should hesitate to give digitalis to patients of somewhat anæmic type, and rely on iron alone. In the robust class I consider that I should fail in my duty not to prescribe digitalis.

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EPILEPTIFORM CONVULSIONS DURING ANÆSTHESIA.

IN connection with your article on the above, in the *BRITISH MEDICAL JOURNAL* of June 25th, 1898, p. 1671, I may mention that I had, six years ago, a death under chloroform, apparently due to a fit. A woman, aged 29, was having a suppurating kidney, with perinephritic abscess, removed. The operation was finished and the anæsthetic stopped, the pulse and respiration being good; while the dressings were being applied the patient became absolutely rigid, the pulse and respiration both stopping suddenly. In this case the rigidity exactly resembled the tonic stage of an epileptic seizure; there was no struggling. There was no history of epilepsy or uræmia.