micturition is too frequent; and the patient is also much tormented with hæmorrhoids, and with an eczematous state of the skin about the neck and face.

Now comes the curious part of this history. During the height of the hæmaturia, the urine had been repeatedly examined, with no other result than the finding of blood-discs and leucocytes; but on July 14th I saw something I had not observed before. I saw in the deposit a number of long delicate beaded threads. In all my experience of urinary examinations I had not seen anything like them in the fresh urine. Since this date, I have examined more than twenty different samples sent to me at half-weekly intervals, and invariably have seen the same appearances. Care was taken to obtain the specimens fresh and uncontaminated; and on one occasion the microscope was actually taken into the patient's bedroom, and the urine was searched as soon as it was voided; so that no doubt could exist that the beaded threads came from within the urinary passages; and that they were not, as was at first suspected, intruders from without.

The following account of the beaded filaments was gathered from repeated examinations of different specimens of the urine. To the naked eye, the fresh urine looks very much like that from an ordinary case of acute Bright's disease. It has a smoky appearance, and deposits on standing a loose reddish-brown sediment. On closer examination, the sediment is seen to consist of little soft brownish masses, or flakes. Under the microscope, these flakes are found to be composed of leucocytes or pus-like corpuscles, intermixed with a few blood-discs. In these flakes are found the beaded filaments, twisted and turned in every direction, and forming an inextricable tangle of threads running in and out amongst the corpuscles. There is also not unfrequently observed a brownish granular matter, like altered blood-pigment, lying amid the threads and leucocytes. In perfectly fresh specimens, the threads are found exclusively in these leucocyte-flakes; but, after the urine has been kept awhile, the flakes tend to break up more or less, and then detached fragments of the threads are seen scattered about in the field of the microscope.

With a magnifying power of 500 diameters, the threads are seen to consist of moniliform filaments, of extreme delicacy and regularity of structure. Their width measures about a tenth part of that of a blood-disc, and is remarkably uniform. Their length varies greatly. Some are so long that they stretch across and beyond the field of microscopic vision; but, for the most part they are so twisted and turned on themselves, that it is impossible to gain a precise idea of their length. Some appear as shorter fragments, and many of these have, at one end, a brightly refracting molecule, which is larger than the width of the rest of the thread, and suggests the idea that this is a spore from which the filament springs. Under an immersion-lens, and with good illumination, the threads are resolved into a row of minute spores or micrococci, apposed end to end like a string of beads. Here and there are seen isolated, larger, and strongly refracting molecules, similar to those just described as forming the initial element of one of the shorter threads. The aniline dyes stain the threads deeply, and bring out their structure splendidly. Neither the threads nor the isolated molecules exhibit the slightest movement. The common forms of bacteria-rods and micrococci are never seen in the fresh urine, which exhibits no undue tendency to decomposition. The threads dry on a glass-slide without appreciable change, and they can then be stained and mounted in Canada balsam without losing their characteristic appearance.

As regards the nature of these beaded filaments, I cannot pronounce positively. They certainly resemble no tissue of the animal body—either normal nor pathological. I can make them out to be nothing else than chains of micrococci. Chains of this character constitute a phase in the life-cycle of several bacterioid organisms. F. Neelson has described and figured such chains (calling them "gonidia-chains"), as occurring in the life-history of the bacillus, which produces the pigment of blue milk.* I could not detect, in the chains found in this patient's urine, any tubular structure enclosing the molecules—nor any investment of any kind.

The relation of the organism to the symptoms is, at the present stage of the inquiry, only a matter of conjecture. It is not difficult to conceive that a mycelium-like growth of the beaded filaments might act destructively on the lining membrane of the urinary passages, and cause hæmorrhage. The fact that, in the fresh urine, the threads are found exclusively in the leucocyte masses, seems to indicate that their seat of growth is not in the urine itself, but in a proliferating tissue. I may also remark that the only remedies, among the many that were tried, which efficiently controlled the hæmorrhage, were the oil of turpentine and the oil of eucalyptus—both of them agents of high antiparasitic repute.

Whether this case will furnish a key to some of those inexplicable cases of hæmaturia, which one not unfrequently encounters in practice, can only be determined by future research.

A SUBSTITUTE FOR CARBOLIC SPRAY.

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THE purpose of the present paper is to give the results of some experiments which have extended over a period of several months, and which were undertaken in the hope of bringing before the notice of the profession a substitute for carbolic spray, now used in antiseptic surgery.

Most, if not all, surgeons acknowledge the advantages of the Listerian method of dressing wounds; and nearly all are equally unanimous in asserting that the spray, hitherto a necessity, is both inconvenient and dangerous. The surgeon has his vision obstructed, and his sense of touch impaired. He moreover has the serious discomfort of living during a considerable portion of his time in an atmosphere which treats him not quite so well as an ordinary Scotch mist would. There are many slighter inconveniences to patient, assistants, and surgeon, which are so well known that it is unnecessary to mention them here; but these are trifling when compared with the dangers to the patient attending the use of the spray, especially in abdominal surgery. That the risks of poisoning are not fanciful has, I think, been abundantly proved by Dr. Keith and other observers, who have been led to abandon the spray in ovariectomy. I believe I have myself seen death caused in more than one case of abdominal section by chilling of the viscera.

More than a year ago, an apparatus was advertised as a substitute for the spray, which created a current of air by means of a fan set in motion by clockwork, the air being forced through layers of gauze moistened with 1 in 40 carbolic solution. About the same time I had an apparatus made which created a current by means of bellows, and sucked the air through two wash-bottles filled with 1 in 10 carbolic solution. From some experiments I made at the time with sterilised flasks, I came to the conclusion that, although the carbolic air was pure or aseptic, it was not antiseptic. It then occurred to me that, if one could saturate the air with some more volatile antiseptic, such as oil of eucalyptus, cajuput, or peppermint, a really antiseptic air might be obtained, which, by being diffused in a room or blown on a wound, might answer the same purposes as the spray, without having its disadvantages. Unfortunately, I was prevented by other work from following out my ideas until last month, when I made the following experiments, in which I have been much assisted by my brother.

The first and most essential point to be proved was whether or not air impregnated with the vapour of volatile antiseptics is really antiseptic. To ascertain this, I sterilised a number of flasks of hay-infusion by boiling for fifteen minutes, capping with cotton-wool, and boiling for five minutes longer; after which, to prove their freedom from life, they were placed in an incubator, and kept at a temperature of 100° Fahr. for two days. Having obtained some large wide-mouthed glass jars, capable of holding several gallons, I poured into one series about an ounce of eucalyptus-oil, and into another series the same amount of cajuput-oil, so as to have a thin layer of the fluid covering the bottom of the jar. Into these jars the sterilised flasks, previously freed from their cotton covering, were inserted; being suspended by means of thread from a bar placed across the mouth of the receiver. The transference and opening of the flasks were rapidly performed under carbolic spray; but, when once in the jars, there was nothing to interfere with the entrance and exit of the ordinary atmospheric air.

After a varying period of exposure of from two to twenty-two hours, the flasks were recapped with cotton, and again transferred to the incubator; in doing which the former precautions were adopted, and, in addition, the cotton which had to come immediately over the flask was moistened with a little 1 in 40 carbolic solution, to avoid the contact of germs. After being in the incubator for two days, they were put aside to be examined at leisure.

No change occurred in the flasks through keeping, the hay infusion looking bright and transparent throughout; there was a slight sediment in all, both in those simply sterilised and in the ones subjected to the action of eucalyptus and cajuput; but in no case was there a formation of scum on the surface of the fluid. In contrast to this, some flasks that had been simply exposed to the air, and then covered with cotton-wool, began to appear opaque and have a scum on the surface within six hours.

In order that the report might be free from bias, I asked Mr. Abbott, an experienced microscopist and botanist, to examine the solution microscopically for me, which he kindly did, giving his opinion before I examined the slides.

* Cohn's *Beitrag zur Biol. d. Pflanzen*. Band III, Heft 2, pl. xi.

The following are a few examples of the above experiment.

1. Hay infusion, sterilised August 18th, placed in the incubator for two days; exposed to eucalyptus air for two hours on the 22nd; and then placed in the incubator for two days. Examined on September 7th, and found to be absolutely free from living organisms, but to contain what appeared to be dead micrococci in the slight sediment.

2. Sterilised August 18th, incubator till the 20th; eucalyptus air for thirteen hours, incubator till the 23rd. Examined on September 7th, under a one-eighth object-glass, and found free from living organisms.

3. Sterilised August 20th, incubator till the 22nd; cajuput air for twenty-two hours on the 23rd, incubator for two days. September 7th, one-eighth objective revealed dead bacteria and micrococci, but absolutely no living organisms.

Numerous flasks, acted on in a manner similar to the above, were examined with like results, except in one case, where living bacteria and micrococci were found; this had had the usual precautions adopted, but failed from some cause. Curiously, in one flask, which had gone through the ordinary process and had been exposed to eucalyptus vapour, there was found a growth of penicillium, or some allied plant; but, as there were no living bacteria or micrococci, it would seem that this vegetable growth is capable of enduring greater hardship than its allies; but, as this is only one example, one cannot draw definite conclusions from it.

The experiments related above go far, in my opinion, to prove that, in the vapour of eucalyptus, cajuput, and other similar volatile fluids, we have powerful antiseptics, which, at the ordinary temperature of the atmosphere, may so saturate the air as to kill all infective particles; perhaps not only bacteria and micrococci, but also the germs of fevers and other infectious diseases.

In a chamber regularly used for operating, there would be no difficulty in having a large pair of bellows, worked by hydraulics, to pump a continuous stream of air, which might be carried to any part of the room by means of a flexible tube; the air having been forced through two or three wash-bottles containing pumice-stone and the volatile oil, cajuput or eucalyptus. If the end of the tube have a large bell-shaped opening, the current of air will diffuse itself over a radius of many feet.

I am at present experimenting with a portable apparatus having essentially the same principle as the above; but, as my instrument does not yet realise my expectations, I shall defer its description for a time.

Perhaps there may be no need for an apparatus, if it can be proved that the air of a room saturated with the vapour is freed from germs; for then, all that would be necessary would be to have some evaporating dishes, containing the volatile antiseptic, distributed in the operating chamber. In cold weather, or if the air will not absorb a sufficiency of the material, the current might easily be heated before passing through the wash-bottles; and, in the chamber, a little heat could easily be applied to the evaporating dishes. I hope, before long, to give some further results of trials with oil of peppermint, terebene, and other volatile bodies.

OVARIAN TUMOUR TREATED BY INCISION AND DRAINAGE.—In the *New York Medical Journal* for June, Dr. T. Gaillard Thomas relates the case of a lady on whom two attempts had been made to extirpate a large ovarian tumour, which were abandoned on account of extensive adhesions and profuse hæmorrhage. The patient on several occasions passed into a state of collapse, and was thought by her physician to be dying. She now entered Dr. Thomas's private hospital, where, after vain endeavours to improve her condition by great care and thorough drainage (a drainage-tube having been inserted by the surgeon who first attempted the removal of the tumour, and the opening still persisting), Dr. Thomas cut directly down upon the tumour, and without opening the peritoneum, tried to enucleate it. There was so great hæmorrhage, however, and the sac was so universally attached, that he gave it up and cut directly into the mass, when a large amount of colloid fluid escaped. Carrying his hand into it, he found a large number of sacs, each about the size of a cocoa-nut, filled with fluid, which he broke up. One existed almost outside of the large tumour, and it was into that that the India-rubber tube had been inserted. He opened this thoroughly, exercising care that none of its contents should enter the peritoneum. Two glass drainage-tubes were then inserted, one above and one below, in Douglas's *cul-de-sac*, through which carbolised water could be injected. The patient was placed upon the most nutritious diet, and injections of carbolised water were employed. The tumour diminished in size until it was no larger than the head of a child at birth; and one month after the operation she left the hospital, with instructions to keep up the injections of carbolised water. A month later she appeared to be perfectly well, a cyst of the size of a goose's egg still remaining, which was drained with perfect ease.

SURGICAL MEMORANDA.

MANIPULATION OF THE SCAPULA IN DISLOCATION OF THE SHOULDER.

I HAVE recently had two cases of dislocation of the humerus into the axilla, and in both I have been surprised at the ease with which reduction was effected, under the above mentioned treatment. The arm having been abducted and extended with slight force by an assistant, I firmly grasped the scapula with the right hand over the acromion, and depressed it in such a manner as to make the lower edge of the glenoid cavity slide over the rounded head of the humerus; whilst with the fingers of the left hand I exerted gentle pressure upwards on the shaft of the humerus just below the head. Reduction in both cases was immediate.

I have only these two cases to report, but I am inclined to believe that this method is by far superior to that of the "heel in the axilla", which is not only tedious, but tiring to both patient and surgeon. It might be well, however, to have an expression of opinion upon this important manner, from members who have treated larger numbers.

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CLINICAL MEMORANDA.

INDUCTION OF PREMATURE LABOUR AT THE EIGHTH MONTH.

Mrs. W., aged 42, a slight pale woman, was married at 22, and had her first child at 24. She was confined at the eighth month and fourteenth day of a dead child, after a prolonged labour. The medical man said it had been dead for a fortnight. The second child, born one year and ten months afterwards, was alive up to the commencement of labour, but was born dead after a severe struggle. No instruments were used. The third child was born dead, under similar circumstances. In the fourth pregnancy, she aborted at the fifth month. In the fifth, at the eighth month. The child had been dead some days. The sixth pregnancy terminated in a similar way. The seventh commenced the first week in November 1880. The child being ascertained to be alive, labour was induced the first week in July 1881. The right elbow presented; the child lay with the back to the left ilium. The left foot was brought down under chloroform, and the trunk and upper extremities delivered. But moderate traction on the trunk with finger over shoulders caused the cervical spine to give way. The head was then delivered with forceps.

The following points require to be considered: 1. Was the induction of premature labour justifiable? 2. Was the proper mode of delivery adopted? 3. What are the indications for treating another pregnancy, should it occur?

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BRIGHT'S DISEASE IN AN INFANT OF THREE MONTHS.

As, apart from the sequels of scarlatina, well-marked renal disease is of uncommon occurrence in young children, I desire to communicate the details of such a case which was lately under my observation. In the middle of April last, I was called to see a child of four months, presenting well-marked signs of renal dropsy. About three weeks previously, during very inclement weather, when the child was taken to church to be baptised, he caught cold, and shortly afterwards the genitals and abdominal wall began to swell. There were but slight fever and thirst, with only occasional vomiting, and the child never refused his food. The skin became very pale, and the œdema extended to the face, legs and arms. Since then, the œdema had varied a great deal in extent, coming one day and going the next, but never entirely disappearing. When he was first seen on the 20th April, the general anasarca was well-marked; the eyelids, legs, hands, abdominal wall, and genitals, being much distended and pitting readily on pressure. So tense indeed were the genitals, that both on this, and one or two subsequent occasions, they had to be punctured in order to lessen the difficulty of micturition. The urine was of a pale yellow colour, presenting a very slight smokiness without visible sediment, is faintly acid, and had a specific gravity of 1.001. When boiled, and treated with nitric acid, it threw down one fifth of its bulk of albumen. Microscopic examination showed blood and granular casts, and blood-discs in abundance. A mixture containing iodide of potassium and acetate of potash was ordered; a caution against exposure and cold was given; and a free and frequent use of diluted milk enjoined. On May 1st, the œdema of the abdomen and legs had began