Hypertrophic Open Tube.

No.	Name.	Tubes Post Partum.	Duration.	Remarks, Condition, &c., Found.	Result.
1	Mrs. B	Left Tube	3 months	Ovarian cystoma, tube stretched over tumour and enlarged to thickness of finger; patent throughout, as seen by sound passed through it at operation	Cured

Inflammatory Open Tube.

1	Mrs. A	Right Tube	—	Atrophic right tube like a cord, while left was distended by hydrosalpinx	Excised and recovered.
---	--------	------------	---	---	------------------------

a little gentle manipulation it is felt to enter the tube and may be passed up the hilt. Its point can now be felt with the other hand under the abdominal wall. The same proceeding diagnoses the condition of the other tube. But little or no pain is experienced by the patient, and I have never seen any bad consequences follow. In short, catheterising the tubes is an important part of the treatment. The general condition of the patient and the appearance of the vagina and cervix uteri are almost diagnostic, and from these I have again and again in my *clinique* pointed out cases where we should and did find open Fallopian tubes.

Before passing on to the principles of treatment, I may mention here the possibility of pushing by force the sound through the uterine wall. I believe that has been done, but the operator, if expert, generally knows when it happens. On catheterising the Fallopian tubes, no force at all is to be used; the sound is caught between one finger and thumb, and as much care and gentleness are to be taken as by the surgeon in trying to coax a bougie through a stricture of the urethra.

The prognosis and treatment of open Fallopian tubes are, as a rule, prolonged; not invariably so, for some respond rapidly to it, by an improved tone of health generally, and of the uterus. The etiology of the individual case will indicate the line of treatment. In the first place, and co-equal with the local treatment, the general health is to be attended to, just as in subinvolution of the uterus alone. Rest in the horizontal position, the hot vaginal douche to 120° F., thrice daily, and sedative and astringent medicated pessaries to givetone to the vagina, and keep the uterus as high as can be attained. If displaced, apply a Hodge whenever it can be tolerated, catheterise the tubes once a week, and cautiously feel the way to make intra-uterine applications by the copper probe. Avoid intra-uterine injections. Whenever the medicated probe is grasped by a firmly contracting uterus, it shows tone is returning to the organ, and the tubes will shortly close. As involution goes on, and the strength returns by tonic and dietetic treatment, the untoward symptoms slowly disappear, and the patient very gradually reaches recovery. In obstinate cases, more active local treatment has to be adopted both to the uterus and the uterine end of the tubes. But to enter more minutely into the details of treatment time does not permit.

The records of the history, general and local diseased conditions, as recorded in the tables of hospital and private cases, will demonstrate more fully the grand total of subinvolution of the uterus *plus* that of the Fallopian tubes, and more clearly than any set description can attempt. It has also to be borne in mind that these tables represent only about one-half of the cases seen by me in the same period, of which, in the busy run of work, no note has been taken, that is to say, for the last seven or eight years.

ANTISEPTIC OPHTHALMIC AND AURAL SURGERY.¹

By ADOLF BRONNER, M.D.,
Surgeon to the Bradford Eye and Ear Hospital.

In speaking of antiseptic surgery we mean the method of operating or of treating a wound, firstly, so that we may prevent the entrance of micro-organisms into the wound (aseptic surgery); and, secondly, so that we may destroy or arrest the development

of the micro-organisms which may be in or near the wound (antiseptic surgery).

Since the interesting investigations of Lister, Koch, etc., we know that micro-organisms are the chief cause of suppuration in wounds, and that the constitution and state of health of the patient are not at all so very important for the aseptic healing of a wound as was and is now sometimes thought. I think that ophthalmic surgery, especially cataract operations, proves this fact in a very evident manner. If we operate with antiseptic precautions, we find that a wound of the cornea in an old and feeble person, say of 80 or 90, heals quite as aseptically—that is, with as little tendency to suppuration—as a similar wound would heal in a young and healthy person, say of 30 or 40.

In the *Mittheilung aus dem Kaiserlichen Gesundheitsamt*, vol. i, 1881, Koch published a very interesting article on "Disinfection." He shows that sublimate is by far the most powerful and useful antiseptic. In a solution of 1 in 5,000, it destroys in a few minutes the malaria bacillus, and also its spores. It prevents the development of the spores altogether in a solution of 1 in 330,000, and in a solution of 1 in 1,500,000 the spores develop very slowly indeed.

It is seventeen years since Lister first drew attention to the great importance of antiseptic surgery, but it is only within the last few years that ophthalmic surgeons have attempted to operate with all antiseptic precautions.

Of course, in operations on the eye, antiseptic precautions are not of such vast importance as in other operations. The wound is always relatively very small. The eye is covered by the eyelid, thus excluding micro-organisms, foreign bodies, etc. The wound is constantly irrigated by the tears, and the continuous secretion of aqueous helps to wash out the anterior chamber and to irrigate the wound.

The late Professor Horner, of Zurich, was one of the first to draw attention to the great importance of antiseptic ophthalmic surgery, especially in cataract operations, at the International Medical Congress in London, 1881. Of course, every ophthalmic surgeon has his own antiseptic "fads," if I may make use of the expression, and the antiseptic precautions used at the various ophthalmic hospitals are very different.

I think that I cannot better illustrate my ideas of antiseptic ophthalmic surgery than by recording in a few words the antiseptic precautions used at the Bradford Eye and Ear Hospital. That we have been fairly successful is proved by the fact that, out of over 900 major operations performed at the hospital in the last two years, including 218 iridectomies, 305 operations on the lens, etc., there was not a single case of suppuration. We have a large well-ventilated ward reserved for operation cases only—of course only non-suppurating cases—and no cases of diseased lids or suppuration are ever allowed to enter. The patient is admitted two or three days before operation. The eye is washed out every two or three hours with sublimate lotion (1 in 5,000). In this manner, not only is the conjunctival sac well disinfected, but also the sublimate has time to pass freely into the lachrymal sac, and destroy any micro-organisms which may be there. For most operations, of course, cocaine is used. Whilst under the influence of cocaine, the eye is bandaged, etc. The cocaine, eserine, atropine, etc., solutions are all made with sublimate (1 in 10,000 or 20,000), and thus the development of germs in the fluid is prevented. This seems to me to be of great importance. I have frequently seen cases in which every antiseptic precaution was most rigorously attended to, and then, just before the operation, some cocaine or atropine drops, loaded with micro-organisms, were dropped into the eye. For cataract opera-

Abstract of a paper read before the Yorkshire Branch of the British Medical Association at Sheffield.

tions, we use Robson's eucalyptus spray, as recommended by Hewetson in 1885. The eucalyptus seems to me, however, not to be of much importance. The great point is that the air, passing through the cotton-wool, becomes disinfected; and, therefore, as this air is constantly over the wound, there is less danger of micro-organisms entering the wound. The spray also prevents the breath of the operator, assistants, etc., from passing over the wound.

When the speculum has been introduced, we wash the conjunctival sac well out with sublimate, so as to remove any mucus, germs, etc., which may have been hidden in the folds of the conjunctiva. In cases of enucleation, evisceration, etc., we irrigate the eye during the whole of the operation with sublimate solution. This not only keeps the wound aseptic, keeps the field of operation clear, but also helps to arrest the hæmorrhage. As soon as the bleeding has ceased, and not before, we dress with dry salicylic wool, or, better still, sublimate gauze, but never with a sponge. Sponges are, if not very carefully disinfected, always septic, and ought never to be used. They are not necessary, and always a source of great danger. I have often wondered that we do not see many more cases of meningitis after enucleation, judging by the number of cases in which septic sponges are used for arresting the hæmorrhage.

As regards instruments, they must be sharp and clean. The instruments used for suppurating and non-suppurating cases ought to be kept distinctly separate, not even in the same cabinet. The box or cabinet should be made of wood and metal, and not lined with silk or velvet, etc. After having been carefully washed in sublimate (1 in 5000), the forceps brushed, etc., the instruments are placed on a porcelain or glass dish, and covered with a piece of plate glass. Just before use they are dipped into sublimate lotion, or, better still, into absolute alcohol. They are then examined with a lens, to see if any particles of dust, cotton-wool, etc., remain on them.

Should there be any suppuration in a corneal wound, this can, in most cases, be prevented from progressing by energetic antiseptic treatment; that is, the wound must be opened, the anterior chamber washed out with 1 in 10,000 sublimate solution, and then the edges of the wound burnt by the galvano-cautery. This should, if necessary, be repeated every 5 to 6 hours. I have seen suppuration arrested by these measures in cases in which the eye seemed hopelessly lost. This treatment is also greatly to be recommended in cases of corneal ulcers with hypopyon, traumatic hypopyon-keratitis, etc. In cases of accident, etc., if we carry out these simple antiseptic precautions, we are often able to save the eye from suppuration and subsequent enucleation, and also, in many cases, to prevent sympathetic ophthalmia.

In aural surgery it is, of course, quite impossible to perform an aseptic operation, as the wound is always in communication with the ear or throat. But we can try and make the operation antiseptic, that is, we can endeavour to destroy or prevent the development of the micro-organisms which may be in or near the wound. In operations on the membrana tympani, the external meatus ought to be well syringed out with sublimate lotion, and cotton-wool worn for two or three days after the operation.

In cases of mastoid abscess in which we may have to trephine, or simply make Wilde's incision, we try to make the wound as aseptic as possible by scraping, washing well out with sublimate, and keeping away fresh germs by cotton-wool, or, better still, sublimate gauze. And yet how frequently do we see the wound poulticed? A great many of the cases of fatal mastoid abscess are undoubtedly caused by injudicious poulticing, either before or after the operation.

There is another aural operation, if we may call it so, about which I should like to say a few words—that is, the use of the Eustachian catheter, which is now extensively used in most cases of diseases of the middle ear. Of course, air is, under ordinary circumstances, constantly passing through the Eustachian tube into the tympanum. It seems to me, however, that in passing over the large area of mucous membrane, the micro-organisms are either destroyed or prevented from entering the tympanum. Now, if we blow air in through the catheter, or even with Politzer's bag, the Eustachian tube is forcibly dilated, and the air, full of germs, rushes into the tympanum. In order to make the air which passes through the catheter aseptic, Professor Lucae, of Berlin, suggested to let it pass through cotton-wool. He attaches a gutta-percha capsule filled with cotton-wool on to the Politzer's bag.

There is another point with regard to the use of the catheter

to which I should like to draw your attention—that is, the great importance of thoroughly disinfecting it before use. This is best done by putting it in boiling water for a few minutes. The same catheter ought never to be used for two persons without having been boiled. In fact, we ought to use a different catheter for either nostril. Not only can we introduce the germs of suppuration from one person to another, or from one ear to the other ear of the same person, but, what is of vital importance, we can inoculate syphilis. The same thing applies to the proper disinfection of the aural specula.

ON THE VALUE OF THE CAUTERY IN THE TREATMENT OF ULCERATION OF THE CORNEA.¹

By J. CRAWFORD RENTON, M.D.Ed.,

Assistant to the Professor of Clinical Surgery in the University of Glasgow
Surgeon to the Eye Infirmary, and Surgeon to the Dispensary
of the Western Infirmary, Glasgow.

THE cautery has always been regarded as a valuable means of treatment in general surgery, but it is only in recent years that ophthalmic surgeons have recognised its benefit in diseases of the eye, more especially in ulcerations of the cornea.

The Best Form of Cautery.—The simplest, neatest and most portable, is that described by Mr. Simeon Snell, of Sheffield,² and to him we are indebted for drawing the attention of the profession to its value in severe forms of ulceration of the cornea. His cautery is heated in a spirit lamp, and retains the heat long enough to apply to a small ulcer, but requires reheating for a second or larger ulcer, and this is where I think we are better served by the thermo-cautery, which can now be obtained at a moderate price, with suitable points. It retains the heat as long as is required for any number of ulcers, and in infirmary work this is of importance. The cautery I show has served me for four years without going wrong, and was obtained from Mr. Gardner, surgical instrument maker in Edinburgh.

The Electric Cautery.—There is no doubt that this form of cautery works admirably, but the want of a good reliable battery has prevented us from using this form more. Recently Mr. Salt, of Birmingham, has made for me a neat, portable, and reliable battery, which with very little trouble is constant and most satisfactory. The elements are zinc and chloride of silver, the exciting fluid is a strong solution of chloride of zinc, and the box is so neatly arranged that it can be carried without spilling. A rheostat regu-

¹ Read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, held in Glasgow, August, 1888.

² JOURNAL, vol. i, 1883, p. 9.