LECTURES TO NURSES ON ANTISEPTICS IN SURGERY.*

By E. Stanmore Bishop, F.R.C.S. Eng.,
Hon. Surgeon, Ancoats Hospital, Manchester.

LECTURE III.

In my first lecture I endeavoured to explain to you the changes which occur in wounded tissues in an aseptic state—the changes, in fact, which result simply from the wound uncomplicated by any extraneous causes. Next, to show you what additional results were produced when unnecessary factors step in to modify or impede the process of healing, such as are found acting in a case which is not, or has ceased to be, free from germs.

In my second lecture I have given you some idea of what germs are, their size, shape, conditions, and rate of development. Also, at some length, I have given you the evidence upon which we base our belief in their existence, and their responsibility for the evil results which we find when they are present.

To-day I propose to show you in what way their ravages may be avoided, or if not altogether prevented, may be checked and antidoted.

You will have noticed that I have many times made use of the words "aseptic," and "antiseptic." Do not confuse these terms. They are not by any means identical, although related.

An "aseptic" *state* is a *state* in which germs are absent. They are not, nor have they ever been, present, or if so they have been entirely destroyed. There is no need to make any attempt to overpower them; they are simply non-existent, so far as the case which is aseptic is concerned.

An antiseptic *means* is a *method*—chemical, thermal, or of any other kind—by which germs, when present, may be destroyed, checked in growth, or by which the effects of their growth and development may be prevented. The one is a *state* as opposed to a septic or poisoned state. The other is *a means* by which a septic state may be transformed into an aseptic one, or at least, approximated to it.

Now, in all wounds deliberately made by a Surgeon, our aim is to make and keep the tissues in the aseptic state until healing, or at least granulation, has taken place. We may fail, or we may have to deal with tissues which have become septic before we get them; in either case we use antiseptics to rid us of germs already in possession or to mitigate their effects.

I shall show you presently in what way we proceed to ensure asepticity in wounds which we have under control from first to last; but first, we will describe to you the main antiseptics in general use, and their properties as far as they concern the present subject.

When making inanimate things, as flasks, test-tubes, cotton wool, &c., aseptic, heat is generally applied as I described to you in our last lecture; but heat, in order to be effective, requires to be of so high a degree, that it is almost useless to us as Surgeons. However, in one form—that of the actual cautery—it is sometimes used, as in opening strumous abscesses, for that express purpose. It is also utilised in boiling the water for our solutions, so as to rid them of the germs they might otherwise contain. Luckily, however, what heat can do, can be equally well done, and far more conveniently, by chemical means, and these means may be usefully considered as of two kinds.

First, we have antiseptics of a sufficient strength to kill all germs; and secondly, those not strong enough for this purpose, but sufficient to retain the parts, dressings, ligatures, and what not in an aseptic condition, when once they have become so.

The first class is extremely useful, but like intense heat, it has drawbacks. Some of the members of this class are extremely painful, they are all more or less poisonous, and if used for any length of time, tend to destroy not only germs, but the tissues themselves.

Such antiseptics are chloride of zinc solution, of the strength of forty grains to the ounce; perchloride of mercury solution, one to one hundred; carbolic acid pure, or one to twenty solution in water, that is five per cent. carbolic acid in spirit, one to five, or twenty per cent.; turpentine and absolute alcohol. Iodoform is by some writers (as Watson Cheyne) placed in this category, but I prefer to consider it in the second.

These agents, in the strengths given, are all more or less effectual, but, of course, Surgeons have each their special predilection for some two or three of the list. Moreover, some are specially adapted for special purposes, whilst others act more satisfactorily under ordinary circumstances. So you will understand that, although I shall point out to you those I personally prefer, I do not expect my opinion to bias you for or against any member of the group which, in time to come, you may find other Surgeons preferring. Each man naturally prefers the weapons he himself has tested and found reliable.

Of the first class, for the unbroken skin turpentine is, perhaps, the most useful germicide; it is very penetrating, unites readily with any fatty materials on or in the surface, and is easily washed off by carbolic soap and water.

* As these Lectures will in all probability be reprinted in book form, revised by the author, the diagrams, being printed in colours, are omitted.

previous page next page