

have been formulated. These we shall briefly discuss.

It was suggested that the bacteria acted mechanically by obstructing the various tubercles of the body of the patient. But this cannot be. Though the B. of anthrax was found in large numbers in the capillary tubes of persons dying of that disease, it has been conclusively proved that no mechanical action caused the disease. Thus the mechanical obstruction theory falls to the ground.

Yet some other ingenious minds devised another theory. The bacteria were supposed to deprive the system of its nourishment. This certainly was ingenious; observation of certain diseases seemed to confirm it. Yet it was noticed that in the case of persons dying from anthrax or tetanus there were no signs of emaciation; nor could the changes in temperature be thus accounted for. So this theory, like the other, must be abandoned.

Again, it was thought that the air was withdrawn from the system by the bacteria, who appropriated the oxygen to themselves. But how about the strictly anaërobic bacteria? Moreover, sick persons do not always die from suffocation. Therefore this theory, like those preceding, is unsound.

Still another theory is left. This is known as the zymotic, or fermentative, theory of bacterial action. As the common yeast-plant, the *Saccharomyces Cerevisiæ* of the botanist, splits sugar into alcohol and carbon-dioxide in the rising of bread, so a split fermentation takes place among the fluids of the body. Deadly toxins and ptomaines are formed, and it is these acting upon certain centres of the brain that cause the symptoms so common to the ordinary diseases. You know them well—fever, loss of consciousness, increased respiration, &c. And, further, as no animal can live in its own excreta, so an antitoxine is formed in many diseases, and this tends to cure the patient. Thus the supporting treatment for diseases is coming largely into favour. The life or death of the patient depends upon the ability of the system to resist the bacterial invasion. All points of observation are satisfied by this theory, and it should be added that it is now universally believed.

But are there no methods of getting rid of the bacteria? Yes, fortunately, there are. You may use chemicals, especially bichloride of mercury, carbolic acid, permanganate of potash, formaldehyde, and a host of others. But let me warn you against a too fond belief in the chemical method of sterilisation. The outside of the object may be absolutely sterile, but the inside as foul as ever. You may soak catgut affected with anthrax almost indefinitely in bichloride of mercury, but woe to the patient upon whom it is used! As sure as the sun is in the heavens that patient will contract the disease.

Thus we are face to face with another question.

The only perfect method of sterilisation is by the employment of some form of heat. Dry heat is good, but the articles sought to be sterilised are often ruined. Moreover, a longer time and a higher temperature are required. Moist heat is best, and this can be obtained either by the use of steam, as in the Koch or Arnold steriliser, or by boiling. The choice of either method must be regulated according to the articles to be sterilised. Dressings are best sterilised by steam, instruments by boiling.

Again I warn you, do not put too much confidence in either carbolic acid or bichloride; the only perfect method of sterilisation is by the use of heat. But often, as in the case of the hands, this is out of the question; hence chemicals must be used. And do not think that one sterilisation is going to be enough. Some spores will resist the temperature of steam. In such cases either superheated steam must be used or the articles sterilised on three successive days, in order that the newly-hatched crops of bacteria may be destroyed.

You cannot be too careful in your asepsis. Dirt is the greatest enemy of the human race. You must not introduce any micro-organism into the human system; you should strive to conserve the patient's strength. Think, I beseech you, upon the fatal result of the introduction of anthrax, tetanus, malignant cedema, tuberculosis, erysipelas, or any of the pus germs, especially the streptococcus, into the tissues of a patient! Think of it, I beg you, and be ever on the alert. Such a crime is little short of murder. Let me repeat it: the bacteria introduced into our tissues are our deadliest enemies; outside of the body they may be our friends. Strive by all means in your possession to get rid of all sepsis, for your lives and mine must be largely spent in fighting the bacteria.

Nursing of Diseases of the Eye.

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INJURIES OF THE EYE.

Wounds vary in severity from the smallest scratch to the total destruction of the globe. Even a slight scratch, however, which would be trivial elsewhere, is not to be lightly regarded when it affects the eye. The removal of the corneal epithelium leaves a raw surface which is intensely sensitive, and which gives rise to acute discomfort. Further, the instrument by which the abrasion was caused may be septic. A very frequent accident is occasioned by a child's finger-nail. This sometimes is followed by serious consequences, if the corneal tissue be infected by micro-organisms. Most commonly it is sufficient to protect the eye with a pad and bandage and apply a mildly antiseptic and

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