

in the knowledge that I had sterilized instruments.

The fact that the anthrax bacillus, which I believe to be the only germ which requires for destruction of its spores 130 degrees Centigrade, is almost unknown in this country, renders it unnecessary to bake my instruments at a higher temperature than 110 to 120 degrees Centigrade, which is my limit. I feel, then, that they are free from all pus-forming spores, which are the spores and germs which we as surgeons must prepare for if we eliminate the anthrax. Of course, if anthrax spores are suspected, especial precautions or a higher temperature must be employed.

Dr SPEIR.—I would like to express my satisfaction with the box which has been produced, and the pretty case of instruments. It seems to me to fill the bill, as it cannot be filled by the other method. I recollect a case of laparotomy in which the surgeon who operated had come a great many miles on a train, and the operation was to be performed at one o'clock at night at a hotel, and it was impossible to have anything like aseptic surgery. But with this little box I think we would have been able to have performed that operation aseptically. That instance alone, I think, is sufficient, to give Dr. Roberts a great deal of credit for his introduction of this method, and I appreciate it very much.

Dr. PILCHER.—It seems to me there is one point which must strike us all as the outcome of our attempts to secure immunity from infection in operative work, and that is, that the practice of aseptic surgery is a very difficult thing to accomplish absolutely. It is very interesting to look back upon the progressive development which has been made in the methods adopted for securing immunity from germ infection in surgical work; the very crude attempts which characterized the earlier work; the prevalent idea which, until a very recent period, was the primary one that we must keep out from the wounds that were made harmful materials which the air about might be bringing to it; the immense dressings which were heaped upon a wounded surface;—we cannot but smile as we think of the feticism which seems to have clung

about the use of particular agents. The dependence upon most insufficient means, such as dipping the fingers for a moment or two in bichloride solution, or rinsing off the fingers in carbolic solution, and the like, has been remarked here this evening. One of the most pitiful things that I ever saw, occurred in the work of the great pioneer and master of antiseptic surgery, the one whose name will always be revered by us as the one who led us into the promised land, and that is Sir Joseph Lister, who in his work at Kings College Hospital, is handicapped by having about him an ever-changing set of young men assistants, whom he has to train, as they change every few weeks, and watch them, while at the same time he endeavors to do his own work. In an important operation which I saw him engaged in, a young man who was about to assist him, who came fresh to the field to take part in the handling of the instruments and the wound, was going to do it without any previous preparation. Sir Joseph observing him, in accents of entreaty asked him to first dip his fingers in the bowl of carbolic acid solution, as if the dipping of the fingers for a moment until they got the smell of carbolic acid on them was going to make them pure. We know better than that now, that the smell of carbolic acid does not mean that the individual is disinfected.

It is the methods and the results of bacteriologists upon which we must depend for our guidance in the future, as it is from them we have drawn all the real knowledge we have with regard to aseptic work. It is from these experiments we know what brings about the disastrous results which come at times. It is from their work, it seems to me, that we must draw the lessons by which we are to be guided in our own aseptic efforts in the future. We certainly have passed the time when there can be any question as to the desirability of securing immunity from germ infection in all our surgical work. At the same time it seems to me that we ought never to become so persuaded that we have reached perfection in the practice of our technique, that we can venture to ignore the possibility of failure. It has been my own experience person-