With the bacterial evidence well in hand, the clinical symptoms become clearer and more definite, consequently easier to control by treatment. There is no one line of treatment which will fit every case of scarlet fever for the very reason assumed in the beginning, that it is so often modified and complicated with other infections. The kidneys, heart and nervous structure must be closely watched. The larynx may become involved. Nutrition must be strictly maintained and the destruction of renal tissues prevented. The selective action of scarlet fever poison and the toxins of associate infections must be kept constantly in mind. The stupor resulting from scarlet fever poison is not so serious nor important as if it is caused by the Klebs-Loeffler bacilli. In the latter case a process of degeneration of the nerve center is instituted which is likely to continue; it may be slowly or rapidly, resulting fatally; if not at once, it may be days or weeks after apparent recovery. This is not so with stupor caused by simple scarlet fever infection.

The prognosis is more favorable when this mental condition is caused by the scarlet fever toxin, and this knowledge should inspire hope while life is present in the patient. As long as the heart beats, every means should be exhausted to sustain the strength. In one of my cases oxygen gas and artificial respiration for thirty minutes tided the child over the crisis of the disease.

In malignant and prolonged cases of scarlet fever, the assistance of one or more trained nurses is absolutely necessary. This training must include infectious diseases, which are not usually part of the hospital course.

Not only should the nurse be familiar with the different manifestations of scarlet fever and the best methods of meeting them, as well as the most effectual means of disinfection, but she should be reasonably satisfied of her own immunity. Neither nurse nor physician should be handicapped by a fear of the disease, as the successful issue of a case may require most strenuous efforts and even the constant presence of both for a time.

With all these conditions accepted and carried out, deaths from scarlet fever complications will probably not be eliminated, but they will be much reduced.

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WOULD SURGERY SUFFER IF IODOFORM WAS ABOLISHED?*

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You may break, you may shatter the box, if you will,
But the scent of iodoform will linger there still.

If something else just as efficacious can be found, or is at hand, then iodoform should be forever banished, on account of its odor if for no other reason. This odor is unmistakable, and to-day the laity know it quite as well as the physician. "Once smelled, always remembered," is surely true of this promiscuously used drug. You meet a man on the street and, as he passes, you get a whiff of iodoform; you at once wonder whether he is a physician or a patient. You enter a sleeping-car and the well-known odor comes to your attention; you at once look over your fellow passengers for the sus-

pected one. You get the same odor in the ballroom or in the church, and you at once wonder who has it concealed about the person and why.

I am fully aware that the reign of iodoform is on the wane, and, hoping to add to its non-use I present the subject here. To get substantial data from which to draw conclusions and to give influence, I sent out a circular letter to representative surgeons in Great Britain, Canada and the United States. All of these letters went to gentlemen who hold surgical positions, a large majority being professors of surgery in medical colleges. Medical schools in London, Edinburgh, Dublin, Quebec, Toronto, Montreal and twenty-two of the United States are represented in the replies; so that the information is general and not in the least localized. The circular letter read as follows:

Doctor:—I am preparing for the coming meeting of the AMERICAN MEDICAL ASSOCIATION a paper entitled "Would Surgery Suffer if Iodoform Was Abolished?" In order to give weight, either for or against the question, I am writing to one hundred representative surgeons and asking them to answer the accompanying questions. Will you favor me by answering the questions and returning this letter in the inclosed envelope?

Sincerely yours,

E. C. BRUSH.

The first question asked was: "What germicidal powder do you prefer? Of the 84 replying, 27 used iodoform, 24 used no powder of any kind, 12 boric acid, and 8 used aristol. The remaining 13 used acetanilid, nosophen, iodol, etc.

The second question was for second choice of powders, and the answers have no special significance.

The third question was: "Have you seen any bad effects from using iodoform? If so, what?" Seventy-three report that they have seen bad effects, 11 have not, but 4 of the 11 have seen no bad effects because they did not use the drug.

The fourth question was: "Would, in your opinion, surgery suffer if iodoform was abolished?" Thirty-seven think that the drug could be abolished without any detriment to surgery, 47 that surgery would suffer. Of these 47, 27 think the detriment would be in a general way; 12 limit the loss to the treatment of surgical tuberculosis, and 8 consider the loss to be only in connection with its use in the manufacture of gauze, and in specific cases.

The third question: "Have you seen any bad effects from using iodoform? If so, what?" is the most important and the one bearing directly on the question at issue. Please remember that 73 out of 84 report bad effects, and these range from a slight local dermatitis to death; 28 report local dermatitis, 3 general dermatitis, and 5 report eruptions; 2 report delirium and collapse, 5 intoxication, 14 general systemic effects, 1 congestion and inflammation of the kidneys, 6 delirium, and 1 reports paralysis. Five deaths are reported.

The difference between the number of ailments reported and the number of gentlemen reporting them is due to the fact that several different surgeons report several different toxic effects. Then, too, it is evident that many of them, although using different words, probably mean the same thing. For instance, 20 mention iodoform poisoning and 14 general systemic effects. The two expressions are, no doubt, in a measure used synonymously. It will be noticed that about all of the known poisonous effects of iodoform are mentioned by the 75 surgeons who report them. It might be well to remember that 73 form a very small proportion of

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the number of physicians in this world who have used or are now using iodoform.

Let me give some individual answers and opinions. Dr. John H. Brinton, Philadelphia, professor of practical surgery and clinical surgery, Jefferson Medical College, uses as a powder, "acetanilid alone or in combination with boracic acid and aristol." He thinks surgery would suffer without iodoform. Dr. H. H. Mudd, professor of surgery and clinical surgery, St. Louis, uses some preparation of boric acid, and in reply to the question of surgery suffering from the abolishment of iodoform, writes, "no, not seriously." Dr. L. McLain Tiffany, Baltimore, of Johns Hopkins Hospital, and professor of surgery in the Baltimore School of Medicine, uses no dusting powder and thinks that surgery would suffer if iodoform was abolished, "in local tubercular troubles undoubtedly." Dr. P. S. Conner, Cincinnati, professor of surgery, Ohio Medical College, does not use any powder as a rule, but usually aristol when any is used. He thinks that iodoform could be abolished without any detriment to surgery. Dr. N. Senn, Chicago, professor of surgery, Rush Medical College, writes, "as dusting powder I use boracic acid 4, salicylic acid 1." To the last questions he answers, "yes, I attribute to iodoform valuable antibacillary action in case of localized tuberculosis and inhibitory effect in pus microbes." Dr. G. G. Kenyon, San Francisco, surgeon to St. Luke's Hospital, etc., uses acetanilid and thinks that surgery would suffer without iodoform. Dr. A. Primrose, Toronto, Canada, professor of surgery, University of Toronto, uses iodoform in tubercular cases only. Dr. I. G. Roddick, Montreal, Canada, professor of surgery, McGill University, uses it in tubercular cases; as a dusting powder he uses nosophen, iodol and boric acid. Dr. M. J. Ahern, Quebec, Canada, professor of surgery, L'Université Laval, uses iodoform and thinks surgery would suffer without it. The same is true of John Chiene, Edinburgh, Scotland, professor of surgery, University of Edinburgh. Dr. Christopher Heath, London, professor of surgery, University College, writes: "I consider iodoform the best antiseptic in all operations about the mouth and that the use of it has in my experience considerably reduced the mortality after operations for removal of the tongue." Dr. James Berry, London, surgeon to the Royal Free Hospital, says: "For clean, i. e., aseptic, wounds I never use iodoform or any other germicidal powder. I treat all such wounds by the dry aseptic method, and for several years have not used any kind of antiseptic to the interior of such wounds. For septic wounds, open sores, etc., I often use iodoform and find it useful. I have on several occasions seen, in the practice of others, bad effects and even death, itself, follow the use of iodoform. These have been chiefly cases in which large amounts have been buried in a wound. As these cases were not in my own practice, I am not at liberty to mention any details. I have several times seen a low form of delirium, attributable, I believe, to the iodoform, follow its excessive use in cases of removal of the tongue. I, myself, never use it in such cases. In reply to your fourth question, I think that surgery would suffer if the use of iodoform in open, i. e., septic, wounds were given up, but I do not think that surgery would suffer if the use of iodoform in the interior of aseptic operation wounds were abandoned completely."

Dr. Charles B. Ball, professor of surgery, University of Dublin, writes that he uses "boric acid and glutol in all non-tubercular cases." The question, "would surgery suffer if iodoform was abolished?" he answers with:

"I do not think anything answers so well after excision of a tubercular joint."

A careful summing up of the answers given to the inquiries makes a strong case against the use of the drug excepting to a limited extent and in a limited number of cases. Many surgeons think that surgery would not suffer if there was no such thing as iodoform. There is no doubt that the indiscriminate use of iodoform has done untold injury. If those who use it in local tuberculosis and in specific cases had something else just as good, iodoform would really lose its chief supporters.

So the answer to the title of this paper, "Would surgery suffer if iodoform was abolished?" can be written, "Yes, to a very limited extent!"

Let me predict that in five years, by reason of the discovery of better things, the answer can be written, "No, not in the least!"

DISTILLED WATER AND BOILING FOR THE STERILIZATION OF SURGICAL INSTRUMENTS.*

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The effort to find a means of trustworthy sterilization of surgical instruments has been a particularly perplexing task to the oculist, in view of the extreme delicacy of most of the instruments used by him, and the subject has, perhaps, gone through more phases in his hands than has been the case even with the general surgeon. An ideal method has yet to be found, but the writer has been so much better satisfied with the results obtained by boiling instruments in distilled water, than by any other, that he feels impelled to go into a few brief details and comparisons with some other methods in the hope that others may avail themselves of this practice until better means can be developed.

It is important to emphasize that by distilled water is not meant the product of wholesale vaporization so often masqueraded under that name, in this day of speed at any price, to the detriment of solutions which it is intended to form, and the deception of all who confide in it. The water must be condensed steam, such as a chemist would use for careful analytic work, and not cooled vapor. If attention is paid to this essential detail, the most delicate metal instrument may be boiled for an hour without impairing its surface or sharpness. Ten minutes, however, suffices to sterilize a bright, mechanically clean instrument. Ivory handles, if properly fastened, will stand the same treatment, except that they will become a little yellow if boiled for more than twenty or twenty-five minutes. It need scarcely be added that instruments must be lifted from this solution before cooling, as even the most perfect aqueous product of the still will cause rust under favorable circumstances.

The writer's attention was attracted to this procedure some five years ago, as no amount of soda nor other chemical introduced into our lime impregnated water would prevent a considerable deposit on the surface and the ruin of the edge of instruments. Distilled water was substituted for hydrant water without any thought of a difference in the effect of its use, but the result was so gratifying that a little care was taken to

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