AN EASILY STERILIZABLE ATOMIZER

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The accompanying illustration represents an improved atomizer. Recognizing that the ordinary atomizer in the hands of the average busy practitioner is far from ideal in respect to surgical cleanliness, I have had the old Philadelphia atomizer modified so that the distal portion of the nozzle (three and one-half inches) is detachable from the rest of the apparatus by means of a screw thread. This permits ready sterilization by boiling that part of the atomizer usually contaminated. To

Atomizer with duplicate removable nozzle-tips, which may be readily sterilized by boiling.

facilitate matters further, these atomizers are furnished with duplicate tips, which allow the atomizer to be repeatedly used without the delay incident to sterilization of the tip.

While this style of atomizer may not be applicable in all cases in which atomizers are employed, it is the type most universally used, so that the adoption of this suggestion should materially minimize the transference of infection from one patient to another.

The firm of George P. Pilling and Son Company have kindly followed my suggestion in the manufacture of this atomizer, which may be obtained from any instrument-dealer.

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TREATMENT OF TYPHOID BY CONTINUOUS
SALINE INSTILLATION*DAVID RIESMAN, M.D.
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I wish to preface what I have to say about the Murphy treatment in typhoid fever by a few remarks on the pathogenesis of the disease. We are accustomed to attribute the symptoms of typhoid fever to the typhoid bacillus and to such lesions, produced by ulceration of the blood-vessels, by perforation, etc., as are the indirect result of its action. The general symptomatology of the disease—the fever, the cerebral symptoms, the altered metabolism, and the acute degenerations in the parenchyma of organs—are ascribed to a typhoid toxemia brought about by the entrance into the blood of the poison of the typhoid bacillus. Unlike the toxin of tetanus, this poison is not a secretory product of the micro-organism, but is an endotoxin laked out of the bodies of dead bacteria. As this view of the pathogenesis of the typhoid toxemia is the one almost universally accepted,

it may be bold to question its correctness. But it seems to me that it is not a full and adequate explanation of the principal phenomena of the disease. There is another source of toxemia which the prevailing theory leaves out of account. I mentioned it in a paper published in 1899¹ and in a discussion of Dr. Mallory's address on typhoid fever before the Pathological Society of Philadelphia a few years ago.

Stated briefly, the theory or hypothesis is as follows: There occurs in typhoid fever in response to the cytogenic stimulus of the typhoid bacillus a tremendous proliferation of cells in all the lymphoid tissues of the body. Numerically this proliferation is as much beyond computation or conception as the pullulation of the bacteria themselves. All cell multiplication is attended by the elaboration of metabolic substances which enter the lymph-stream and by way of it the general circulation. When the cells die, which in typhoid fever happens soon after their birth, their disintegration products—the analogues of the endotoxins of bacteria—are also poured into the blood. Is it not conceivable that these two groups of substances—one produced during cell formation, the other during cell destruction—are factors in the toxemia and play a part in the causation of the general symptoms of the disease? Granting even that the products of metabolism of the newly formed lymphoid cells and their disintegration products are normal to the body, the quantitative increase occurring in a comparatively short time must tend to swamp the system. But it is more than probable that the metabolic products in the circumstances are abnormal.

That in the formation of the cells and of the bacteria enough proteid or other material is taken from the blood to make a difference is unlikely, although the point is worth considering.

Whatever the source of the poisons, it is eminently desirable to have a method that will eliminate them. Clinicians have endeavored to promote elimination by giving large amounts of water by the mouth and salt solution in considerable quantities by the rectum.

The good results obtained by surgeons in the treatment of peritonitis and other abdominal inflammations and in grave postoperative conditions by the Murphy method of continuous enteroclysis led me to use this method in the treatment of typhoid fever. It seemed rational to suppose that the constant instillation of salt solution into the bowel would better accomplish the result aimed at by the administration of water, namely, the filling of the blood-vessels and the increased excretion of poisons. I am aware of the fact that hitherto no positive proof has been brought that soluble poisons, at least none of an albuminous nature, are eliminated in the urine in typhoid fever; there is, however, nearly always a pronounced bacilluria.

By the Murphy method it is possible to introduce into the system extraordinary quantities of fluid. Murphy mentions the case of a child of 11 who absorbed, without losing one drop, 30 pints of salt solution a day. Such quantities I have not succeeded in introducing, nor have I attempted it, but it is easy to secure the absorption of from one-half to one gallon per day.

The method, termed proctoclysis by its inventor, is described as follows:

The patient is placed in the Fowler position. The apparatus in its simplest form consists of a fountain syringe or can with a large rubber tube attached, terminating in a

* Read before the College of Physicians of Philadelphia, May 5, 1909.

1. Riesman, David: Internal Secretions; Metabolic Toxemia, Philadelphia Med. Jour., Feb. 4, 1899.