

form of diarrhoea, as probably also they are the first efforts to treat the disorder according to germicidal method. Since then, in this country, that attention has not been given to the experiments which the conclusions would seem to warrant.

It was my privilege, soon after the report of Hayem was published, to have an opportunity of testing clinically in dispensary work the statements made by him. After using the acid in the green form of diarrhoea for a short time, the suggestion I resented itself of trying the effect of it in all the varieties of diarrhoea without reference to the color of the stools. The idea of the universal application of germicides to diarrhoea was strengthened by the paper, a few months later, of Dr. Wm. Booker, read before the International Medical Congress at Washington, on the different forms of bacteria found in the discharges of summer diarrhoea. He stated that twelve varieties had been isolated, eleven being bacilli and one belonging to the variety cocci. He gave their action on milk as follows: "Some coagulated milk with acid reaction and evolution of gas; one caused coagulation with alkaline reaction; one gave the milk a peptonized appearance; and other varieties caused no perceptible change."

On account of its simplicity as well as its elegance, the employment of this universal acid treatment was a very easy one, and the results were such as to leave no doubt as to its usefulness. The trial began during the summer of 1887 and has been continued during the present summer, over one hundred patients receiving the treatment.

The age of the patients varied from ten weeks to twenty four months, and there was great variety in the severity. The stools, which ranged from three to twenty daily, presented all the varieties found in the different forms of diarrhoea. They were the watery-mucous, the yellow with coagulated casein, the slightly greenish with mucus, casein, and sometimes blood, and the distinctly green. In very few cases of the green diarrhoea so treated was there failure to afford some relief, and many of the recoveries were certainly remarkable. But, while the trial confirmed the conclusions of Hayem as to green diarrhoea, it also established the usefulness of the acid in the other varieties.

The significant features in support of lactic acid are these: It not only relieves the diarrhoea, but it also acts beneficially for the vomiting, fever, and restlessness. It changes also the very offensive odor of the stools.

The vomiting is controlled within a few hours so completely that the child can begin to take nourishment, and, although it may subsequently occur at intervals, a continuance of the treatment soon stops it. Again, the fever which attends every case of any severity is reduced by it. To not a single child in the one hundred cases was any antipyretic given, the fever usually subsiding before the diarrhoea had fully stopped. Attending

the reduction of temperature there was shown a disposition to sleep, and the intestinal pain, which was often severe, received no other medication than the acid. To none of them was opium given in any form.

Within a period varying from twelve to seventy-two hours, the discharges would begin to change, the greenish becoming less watery and assuming a yellow color, while the watery-yellow and sometimes bloody had a greater consistence without the unpleasant odor.

The general results have been so satisfactory that all astringent and alkaline remedies have been abandoned, lactic acid alone now being given, no matter what variety of diarrhoea presents itself.

But as the children so treated came largely from the tenement houses, where crowding, heat, poor ventilation, and improper food are important factors, it was found advisable to adopt some form of dietetic measure in connection with the acid. In a monograph on the treatment of the diseases of children, read by Dr. Jacobi in 1879, a valuable suggestion is given concerning the feeding of children. The frequency of diarrhoea in children fed wholly on breast milk had already presented itself, and for a considerable time it had seemed contrary to reason to so continue feeding, although good authorities advised, whenever possible, to insist upon a diet wholly of breast milk. This was done, and the results were no better, while in children somewhat older who had begun to take other foods, there was usually a benefit when these were alternated with mother's milk. An exclusive diet, either of breast milk or prepared food, did not seem to give good results, and the question was not satisfactorily answered until the method employed by Dr. Jacobi was tried. In his monograph he states that even normal mother's milk contains fat that is not digested, and that when diarrhoea occurs, if lumps are found in the passages, they are not wholly undigested casein, but, on the contrary, are mostly fat, and probably remnants of intestinal epithelium. These fats are olein, margarin, and stearin. Fatty acid in abundance is a common cause of derangement of digestion and assimilation, and it impedes the normal secretion of other digestive fluids.

He then quotes the conclusions of Wegscheider concerning the fat in breast milk: "Fat can not be completely absorbed: one part leaves the intestines in a saponified condition; a second part as free fatty acid; a third as fat in an unchanged condition." From this he concludes that one precaution to observe is to guard against food too rich in fat. As the mother's milk is best when it can be tolerated, he endeavors to make this possible by diluting it with some liquid farinaceous food. To do this, he suggests preceding the nursing by one or two teaspoonfuls of barley-water. Instead, however, of the barley-water, some of the prepared foods were tried according to this principle, and the results were beneficial, due, probably, to the small