

volumes of steam may be generated by dropping hot irons or bricks into a vessel of water. Another plan, and an excellent one, is to curtain the bed with blankets and introduce steam through a tube communicating with a vessel of water standing outside the inclosure, over a gas or spirit lamp. In some children, spray may be sent directly to the inflamed surface by the steam atomizer. From ten to fifteen minutes' steaming every hour or two does much to soften the cough and relieve the dyspnoea. This instrument also affords a ready means of carrying a medicated vapor to the seat of trouble. Just now lime-water is being much used, there being some evidence that it has a solvent effect on the false membrane. Though doubting whether the minute quantity of lime introduced in this way can have an appreciable effect, I would not discourage its use, since the vapor of lime water is at least as good as that of pure water. There are other solvents of pseudo-membranes. Among the best of these is, according to experiments recently made at the New York Foundling Hospital, liquor sodæ, diluted about fifty times with water, or, perhaps better, with aqua calcis; it may be used freely with the atomizer. Feeble solvent power is also claimed for both lactic acid and chlorate of potash. If any of these agents can destroy the membrane, they should *a fortiori* prevent its formation if used early enough.

If not disagreeable to the patient, I think it well to add a little carbolic acid to these atomizing fluids. Unfortunately, some children are so young and many are so perverse, that effectual use of the atomizer is very difficult. But do not fail by some one or all of these methods to furnish to the child for at least a large part of the time a steam-laden atmosphere.

Perhaps something may be gained by the application of mild counter-irritants over the larynx. A slice of salted fat pork, made more irritant by dusting its applied surface with mustard, or black pepper, or powdered camphor, and stitched to a cloth passing around the neck, answers a good purpose. Hot poultices, and cloths and sponges wrung from hot water, are sometimes bound upon the neck. Without great care, they wet the clothing and the upper part of the chest, and do more harm than good. Some practitioners prefer the continuous application of cold, but I have had no experience with this method.

The hoarse dry cough and the tendency to dyspnoea will suggest to you an early resort to emetics and expectorants. It used to be thought, and some are still of opinion, that there is peculiar virtue in the harsher and more depressing emetics, such as antimony and hive syrup. For myself, while not objecting to giving these agents once or twice at the outset for their emetic effect, I am not favorable to their repeated administration. Being powerfully depressant, patients kept under their influence rapidly lose strength, and I doubt if their local action is better than that of lighter

emetics, such as ipecac and alum, and the sulphates of copper and zinc. My preference is for the wine or syrup of ipecac, repeated whenever it becomes necessary to produce emesis. A teaspoonful of powdered alum mixed with honey or syrup is an old and still popular remedy. Very many physicians rely wholly on the sulphate of copper as an emetic. With the act of vomiting some secretion is carried from the larynx and trachea; perhaps pieces and casts of false membrane are thrown out, and considerable relief follows, but it is seldom permanent. Before long, in most cases, the dyspnoea again becomes urgent, driving us back to emetic treatment.

Towards the end, the stomach responds less readily to emetics, because, as I suppose, the functions of the nervous system are in abeyance. I have seen large quantities of nauseants given in the last stages of croup without result.

I had almost forgotten to say that apomorphia has gained some favor as a prompt and non-depressing emetic. As little as .0015 gramme, or the fortieth of a grain, hypodermically, will effect the object.

Because emetics bring some relief to urgent symptoms, there is a liability to their over-use.

Nothing is gained by keeping a child constantly nauseated; on the other hand, appetite and strength are lost, and rapid prostration ensues.

Aside from favoring the secretion of mucus and driving from the windpipe, *occasionally*, the accumulated products of the inflammation, I doubt if anything is to be gained by the use of these agents.

Most authors recommend the warm bath early in croup. It reduces the fever, it relaxes the system, and is a reliable adjuvant to the emetic treatment.

Until a recent date, much reliance was placed on mercury as a remedy in membranous laryngitis on the theory that it abated inflammation and promoted the breaking down and liquefaction of the false membrane; it was used early and late in all cases.

This treatment, once so popular, has fallen into comparative disuse. I must confess that I am not yet convinced of its uselessness, and that I still continue the practice, partly because it has happened to me to see some recoveries under it, and partly because I would not hastily abandon a remedy that has been held to be of the greatest service by many eminent physicians. I do not believe that mercurials have any effect on the already formed membrane, but I am not certain that they may not so modify and lessen the inflammation that the materials for the manufacture of this membrane are no longer furnished.

But if mercury is to be of any use in a disease of such rapidity, no time is to be lost in bringing the system under its influence. Unless we can so give it as to insure prompt action, we had better not give it at all. I like the plan of small doses often administered. From .01 to .03 gramme—