

is given by the State Board of Health of Massachusetts is thirty cents for each head of population, not to mention the extensive plant necessary and the cost of labor.

The methods above mentioned, of rapid filtration and straining through coke, have the further advantage of disposing of the sludge to a considerable extent and in a much more cleanly and satisfactory manner.

The following table of results is taken from the report of the Massachusetts State Board of Health and shows the comparative efficiency of the different methods of sludge removal from sewage :

Method.	Average per cent. removal of		Bacteria.
	Alb. Ammonia.	Oxygen consumed.	
Rapid filtration through gravel	89	87	96
Chemical precipitation.....	57	50	68
Sedimentation.....	30	21	15
Straining through coke.....	52	44	43

The above results were obtained from experimental filters and tanks, using city sewage and operated under trained scientific supervision. Consequently it is to be expected that the less complicated methods would prove comparatively more efficient in general practice in the smaller cities and towns.

A dilute sewage will naturally show a smaller percentage of purification by any method of treatment than a more concentrated sample, but on the other hand it will pass through the filters at a higher rate of flow per acre and with less clogging of the upper layers of filtering material.

The above considerations would indicate that it will be possible to discharge sewage of many small cities and towns into streams during periods of high water without causing a nuisance, but that some means of partial purification during the periods of low water and small flow is desirable ; also that the method of straining through coke will give satisfactory results where the sewage to be treated is dilute. It should not be lost sight of that complete purification can readily be obtained by conducting the effluents from the coke strainers to filter beds of sand or other porous material.