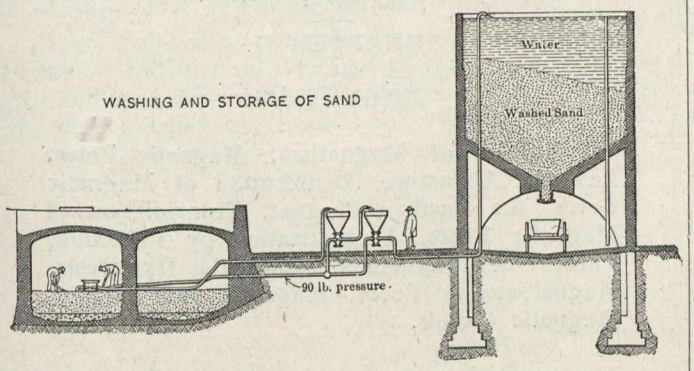
Storage of Pure Water.

After water has been filtered or otherwise purified it is necessary to store it in the dark to prevent accidental contamination and to prevent growths of algæ. These "clear water basins" are concrete masonry structures with arched roofs supported on piers, very much resembling the filter plants themselves, except that there is no filtering material.



They have a capacity sufficient to compensate for the hourly fluctuations in consumption.

Benefits of Filtration.

It would be interesting, if there were time, to take up the benefits to be derived by filtration and to show how a community is benefited not only in the supreme matter of saving lives but in many ways that affect the purse strings of every household. It could be shown, for example, that at Lawrence, Mass., the introduction of filtered water saved an amount equivalent to $9.50 per capita each year; and that in Albany, N. Y., where the typhoid fever death rate was reduced from 105 to 26 per 100,000, the annual saving of life value was $7.80 per capita. At the ordinary life insurance rates the introduction of this filter was therefore equivalent to handing to each head of a family a paid-up life insurance policy of $2,300. The vital statistics of Pittsburgh and Philadelphia have shown that in these cities which until recently have been hot-beds of typhoid fever, the death rate from that disease has fallen to a nominal figure since the introduction of filtered water.* It must not be thought, however, that typhoid fever is caused only by drinking water. There are many other ways in which it is transmitted, a fact which should not be lost sight of in considering the subject of water purification.

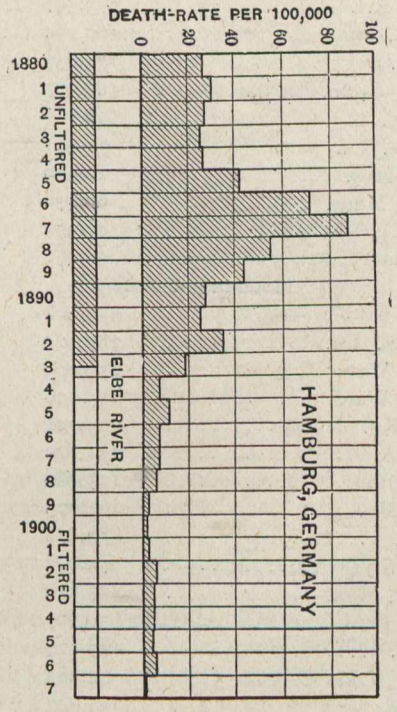
From reading the literature relating to the purification of water it would be easy for one to obtain the idea that the principal object of filtration is to reduce the typhoid fever death rate. This is not so. The object of filtration is to purify the water supply and the use of pure water means a great deal more than a lowering of the typhoid fever death-rate. Statistics have shown that where an impure water supply has been filtered many other diseases than typhoid fever have been reduced and that the general death rate has fallen by an amount many times greater than that due to the reduction in typhoid fever alone. Prominent in this has been the reduction in the infant mortality, especially as relating to diseases of a diarrhoeal character. Sanitarians believe, also, that the use of pure water tends to improve the general health tone in a community, thereby preventing other diseases from being acquired even though they may not be strictly of a water-borne character. For instance, in some places it has been found that the introduction of filtered water has decreased the death-rate from pneumonia. These are matters that are just coming to be known but they are believed to be of great importance.

Filtered water is desirable, also, from the standpoint of general cleanliness and common decency, and to-day filters are being built in cities supplied with water from an almost uninhabitated watershed, as at Springfield, Mass., thus forestalling the possibility of an epidemic from accidental causes.

We might also approach the subject from an economic point of view and show that when a hard water is softened, when a colored water is made white and when a turbid water is made clear, there are corresponding financial benefits to the entire community that more than offset the cost of the process.†

Filtration vs. Sewage Disposal.

Finally, I would like to say a word in regard to using water without filtration. There are still some who believe that it is better to prevent the pollution of lakes and streams with sewage than to allow the streams and lakes to become foul and then spend money to purify them. The answer to this is that for ideal conditions both ought to be done, and in the future both will be done. To allow our naturally pure streams to become as foul and unsanitary as many of them are is indeed a disgrace. Nevertheless, sanitary improvements, like all other improvements, cost money and it is wisest to spend our money where it will go farthest. Now the filtration of water is very much cheaper than the purification of sewage and from the sanitary standpoint is more efficient. It is therefore logical, scientific and



hygienically proper to devote our attention first to the filtration of our water supplies, leaving questions of sewage disposal to be treated locally and principally from the standpoint of nuisance. Where pollution threatens, the essential thing is to have somewhere between all possible sources of

*Detailed data as to the effect of water supplied on typhoid fever death rates are to be found in "Typhoid Fever," by Geo. C. Whipple, published by John Wiley & Sons, New York, in 1908.

†See the "Value of Pure Water," by G. C. Whipple.