interest on the eve of what promises to be a permanent filtration movement in this country.

As might be expected of a system, which from its inherent simplicity was susceptible of but little improvement since its first appearance, there is not very much to record in the recent development of slow sand filters. In this familiar type the raw water after preliminary sedimentation, where necessary, is applied to beds consisting of horizontal layers of rather fine sand supported by gravel, and underdrained, the whole being enclosed in a suitable tank or basin. The efficiency of this system to some extent depends upon, and is improved by, the fineness and depth of the sand employed, and on the lowness and uniformity of the rate adopted. As filtration proceeds, the friction of accumulated suspended matter retained on the surface of the bed gradually reduces the quantity of the water passing through, below the allowable uniform rate controlled by a regulator on the outlet pipe, and the filter must then be thrown out of commission to permit the removal of this surface layer deposit to a depth of from ½ in. to 1 in.; when the bed becomes reduced to some minimum thickness, the sand so removed is either replaced by new material or used again after washing. The quantity of the water filtered between scrapings depends on the character of the raw water, the grain size of sand, and the maximum loss of head allowed.

The accompanying sketch of a small plant installed at the Nova Scotia Hospital, Dartmouth, N.S., is here introduced for the purpose of illustrating the main features of a filter of this type. In this two unit plant the raw water enters the filters, by gravity maintained at a constant level by a float valve in the common inlet chamber. An overflow from the filters provides an outlet for the water in case of its failure to act. The main drain from both beds is led to a regulating chamber, and has also a branch connection to a common waste pipe. Either filter can be thrown entirely out of commission, or its effluent can be turned to the regulating chamber, or diverted to the under-drainage system of the other filter, when required for filling from below after washing, or it can be let run to waste. The filtered water passes from the regulating chamber to the clear water basin through a regulator. The type here installed was an ordinary float pipe with an orifice at the free end. There is no necessity for venting as the outlet of the regulator is never entirely submerged. The high water overflow from the clear water storage basin permits of a maximum loss of head of four feet. The discharge can be varied either by changing the size of the orifice or the extent of its submergence below the surface of the water in the regulating chamber.

The plan and section of the filter shows the under-drainage system with the sand and gravel in place; it will be noted, that provision against the passage of the water through the bed at undesirable rates down the faces of the walls and piers is guarded