

It is notable that in the midst of our enthusiasm for the activated sludge method of sewage treatment, a studious reserve is maintained in every paper describing experiments, as to the general outlook. There are many unsolved problems, all acknowledge, and as yet there is

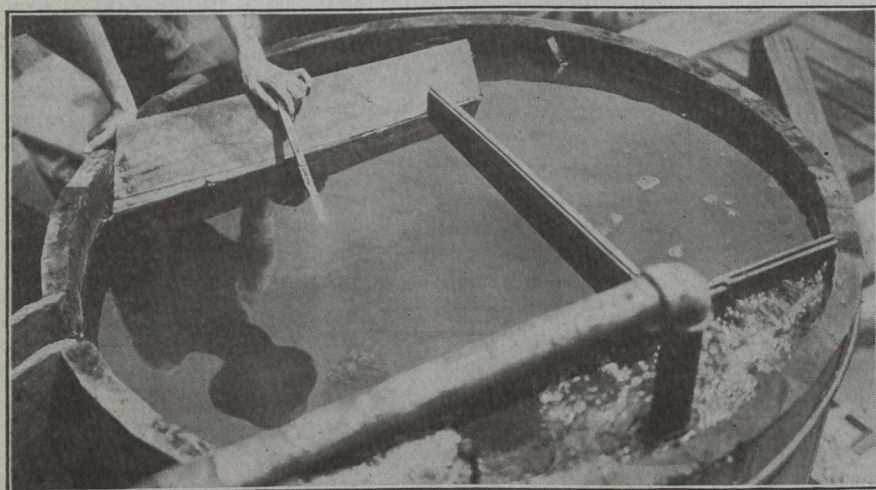
tation; 5, absorption; 6, natural drying; 7, artificial drying.

(i) Marketing sludge.

(j) Standardization of terms in the activated sludge process with a view of comparing results, embracing, 1, air used, and its measurement; 2, diffusion area; 3, volume of activated sludge; 4, quality of activated sludge; 5, volume of surplus sludge removed; 6, putrescibility and stability of sewage and sludge; 7, such other standardizations as may seem desirable.

The question was discussed of effecting a permanent organization for systematically co-operating in solving the several problems of the activated sludge process so as to avoid duplication of experiments throughout the United States and Canada, and also to protect the process from being controlled by patents issued without complete information having been submitted to the Commissioner of Patents by those who had knowledge of the process prior to the application for letters patent.

It was finally decided that this was not the proper time for effecting such an organization; that the objects sought could best be obtained for the present through a committee and individual service, and upon motion of Professor Earle B. Phelps, a committee composed of F. A. Dallyn, provincial sanitary engineer, Toronto, Canada; George T. Hammond (the author), engineer of design,



**View of Top of Continuous Flow Tank of Imhoff Type, Showing Clearness of Contents in the Flowing Through Chamber from which the Tank Discharges.**

need of caution. It is now nearly two years since the method was announced, and studies have multiplied relative to it. What, may we ask, is the present status of the method, and what are the main problems as yet unsolved or not completely solved?

At the annual convention of the American Society of Civil Engineers, an informal meeting of those interested in sewage disposal was held, which was attended by thirty-two members of the society. The purpose of the meeting was stated by Mr. T. Chalkley Hatton, of Milwaukee, as follows:—

1. To discuss the problems connected with the treatment of sewage by the activated sludge process.

2. To compare results obtained from the several experiments carried out in the United States and Canada.

3. To harmonize those results with a view of determining the causes for the variance.

4. By co-operation to determine, if possible, the following questions:—

(a) Most efficient depth of aerating tanks.

(b) Most efficient type of aerating tank, embracing 1, baffles; 2, unbaffled; 3, bottom cross-section; 4, circular or rectangular.

(c) Most efficient method of diffusing air, embracing 1, open air pipe; 2, perforated or woven metal disks; 3, stone ware; 4, wood plates.

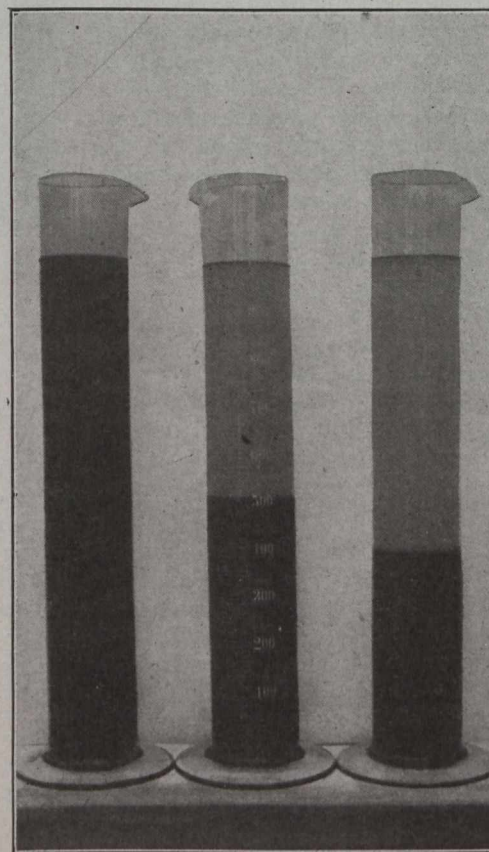
(d) Probability of diminishing efficiency of air diffusers, and consequent necessity for providing appliances and facilities for cleaning same at intervals.

(e) Most efficient type of sedimentation tanks, embracing vertical flow and horizontal flow and probable velocity in each to effect satisfactory precipitation.

(f) Best method for removing sludge from sedimentation tanks and regulating the volume to be returned to the aerating tanks.

(g) Volume of dry sludge (10% moisture) secured per million gallons of sewage treated.

(h) Removing surplus sludge from sedimentation tanks and dewatering, 1, subsequent settlement under water pressure; 2, pressing; 3, centrifuging; 4, fermen-



**Samples from Continuous Flow Activating Tank to Illustrate Rate of Sedimentation.**

A—Unsettled; B—Settled five minutes; C—Settled twenty minutes.