

very fine filter papers and found that the hydrate was not decreased in any way."

Now this is suggestive. All water filtration men know that where aluminum hydrate is in suspension in water, that hydrate, no matter how finely divided the particles may be, can be removed by passage through fine filter paper; that is, if the texture is fine enough and there are enough thicknesses of the paper. If the resulting filtrate then reacts alum, the presence of undecomposed alum is proved, and not aluminum hydrate. All this suggests that as a sequence of a practically negligible period of coagulation in this process, undecomposed alum may be passing the filters, later perhaps to become decomposed and form an undesirable deposit in the pipes, or to cloud the filtered water as it leaves the taps in the city. If not so decomposed, an active corrosive agent is thus present in the filter effluent. This point requires clearing up by Mr. Howard.

From the information before him, the writer is not prepared to accept without question the Toronto drifting sand filter as a reliably efficient and economical process of water purification.

It is ingenious, and seems to satisfy the Toronto authorities; but it is not apparent that the citizens of Toronto desire the drifting sand process at any cost, and it seems quite unusual that a plant which has been operated as long as has this one, should not have developed accurate costs, a statement of which the profession at large, and the taxpayers of Toronto assuredly, would appear to be justly entitled to.

When these figures are published, it is to be hoped that they will be so decisive as to set at rest, once and for all, the doubt now existing in the minds of a great many water works engineers respecting whether Toronto is actually receiving acceptable water purification service at reasonable cost.

GEORGE A. JOHNSON,
Colonel, Utilities Division,
Construction Division of the
United States Army

Washington, D.C., November 25th, 1919.

RECOVERY OF VALUABLE CONSTITUENTS OF GARBAGE

Sir,—The writer has read with much interest the article on various methods of garbage disposal by Samuel A. Greeley which appeared in last week's issue of your paper, and while agreeing with him on many of his points, yet his article leaves a rather one-sided impression on the mind of a layman, and as councils are oft-times made up of laymen and as Mr. Greeley has hinted at various methods of garbage disposal, such as feeding to hogs, sorting and reduction, it may be well to ask Mr. Greeley if he will be good enough, to write another article, giving some information, which he must be in possession of, such as spreading of disease amongst cattle and hogs by feeding them on garbage.

No doubt Mr. Greeley knows of many cases where epidemics have broken out among swine and cattle as a direct result of some one trying to make a few dollars by taking what is admitted to be the most filthy and unsanitary stuff and attempting to turn it into pork, beef, or anything else intended for human consumption.

If Mr. Greeley has not heard of any such cases as referred to, perhaps he will not mind writing to Kitchener, Ont., or to the Ontario Board of Health, Toronto.

Mr. Greeley also refers to the system of sorting, such as is done in "Buffalo, Rochester, Pittsburgh, Columbus and elsewhere," and admits that the revenue derived from the sale of such sorted material "does not usually much more than pay for the cost of operation."

But, Mr. Editor, is the dollar the most important item? Very few people have any desire even to poke their nose inside of a reduction plant of any kind, much less work in it. Take, for instance, the plant just outside of Detroit. Everybody who has travelled in the neighborhood of that plant can bear testimony to the very rich odors arising there-

from, even without going within a mile of the plant; and, sir, what right has any one for the sake of making a few dollars, to ask men and women to work under such conditions as must obtain, around any reduction plant, no matter what kind or where situated.

The ordinary refuse coming from a number of houses daily is of the most filthy kind, and contains many things that are indescribable. The writer has studied the question of garbage disposal for some years, and has reached just one conclusion: Burn it up, either in the open or in an incinerator, and do this just as soon as possible after the garbage leaves the house, as it only takes a few hours to produce maggots, flies and odors, all of which tend to make things unpleasant for any person handling house refuse.

Here are a few of the kind of goods the writer has seen brought to an incinerator practically every day in the year: Dead cats and dogs; decayed fish, poultry and all kinds of meat; filthy rags, which have often been used for bandages on all kind of sores; rotten vegetables, fruits and canned goods; and other filth not decent to mention. If any person does not believe this, he can prove it for himself by going into an incinerator or reduction plant—not for a few minutes, but staying there for a few hours—and the writer is convinced that once a person has done that, he will be of the opinion that incineration is the only sane, sanitary, sure way of dealing with garbage with the least possible chance of spreading disease and the greatest security for a healthy, sanitary and clean town or city.

J. G. PICKARD,
President, Canadian Incinerator
& Furnace Co., Ltd.

Toronto, December 1st, 1919.

The Engineer's Library

"COST KEEPING AND CONSTRUCTION ACCOUNTING"

By G. Ed. Ross, associate member of the Northwest Society of Highway Engineers, and assistant secretary, chief accountant and cost keeper of the Phez Co., Salem, Oregon; 172 pp. and cover, 5½ by 8¼ ins., cloth bound; price \$2.50 net, post paid.

After a detailed review of the author's experiences, and testimonials to his system of cost accounting, there follow 42 pages of descriptive features which were used very satisfactorily, says the author, by the Oregon State Highway Department, of which he was formerly secretary and auditor. Pages 76 to 129 are devoted to illustrations and explanations of forms recommended. A chapter on organization follows, with a suggested organization chart. The volume concludes with a discussion of the value of good cost records and the field for competent cost accountants.

The author says: "I spent 12 years doing in large organizations what I have written about, and my book is an outline of what has been actually accomplished rather than a theoretical story of what ought to be done. It is a practical book from cover to cover, and sets forth a principle which is being used on many of the larger projects on the Pacific coast, as well as by some manufacturing firms and a great number of counties. I have attempted to handle the subject in as readable and interesting a manner as a technical subject of such a nature would warrant, and have woven into the narrative a little poetry and some statements of a general nature to get away from the dryness which frequently is found in such publications."

BRITISH ENGINEERING STANDARDS ASSOCIATION.—Thirteenth report of work accomplished, covering period from August 1st, 1917, to March 31st, 1919; 124 pages and paper cover, 5½ by 8¼ ins.; published by the association at its office, 28 Victoria St., Westminster, S.W.1, Eng.