

Utilization of Waste in Cities

R. E. GOSNELL.*

Among other things into which I made inquiries at Washington was the question of the utilization of garbage or kitchen waste. That is a matter which has been taken up by the United States Food Administration, and investigations have been made of present conditions and possibilities. America is a great country of waste—I mean Canada and the United States together. We are discovering more and more that Germany's power of resistance in the war is a power economics. In her intensified methods of cultivation, in study of the utilization of waste, and in her study of by-products she has accomplished results which are wonderful. She has performed miracles, and comparing her industrial system with ours, her professors have every reason to be conceited, as they are. If Germany were as wise in her psychology as she has been in her science, she would have been great without military aspirations at all.

What we waste in garbage may be ascertained from what it is possible to recover in values. It has been illustrated in the United States that at present prices one ton of garbage will produce from three to four dollars in tankage, and seven dollars value in grease, or ten dollars per ton in all. It may be that the American housewife and the cooks of the boarding houses and hotels of the United States are extraordinarily wasteful, and more wasteful than in Canada. One cannot very well stay in the United States for any length of time without acquiring the statistical habit, and here are some of the facts.

Twenty-nine cities in the United States having a total population of 17,000,000 producing 1,200,000 tons of garbage per annum now dispose of their garbage by reduction. From these 29 plants there is produced annually 70,000,000 lbs. of grease valued at \$8,500,000, 150,000 tons of fertilizer tankage valued at \$2,250,000.

Fertilizing elements produced from the tankage at the present time, estimated at 9,000,000 lbs. Nitrogen, 25,000,000 lbs. Phosphate of Lime, and 2,500,000 lbs. of Potash.

The output of Glycerine from garbage grease produced in the United States is sufficient to produce 8,000,000 lbs. of nitro-glycerine. The yield for soap stock is sufficient to manufacture 200,000,000 commercial cakes of soap of 12 ounces each.

Developments are now being made and from tests made, 8 to 10 gallons of commercial alcohol have been produced per ton garbage in addition to recovery of grease and tankage. There is, at the present time, a plant being constructed to utilize and produce alcohol.

The reduction method is suitable only for the larger cities, but there are still 23 cities in the United States which have a total population of 5,500,000 which do not use their garbage and are large enough to undertake it. These latter could produce 400,000 tons of garbage per annum, from which could be received \$2,400,000 value of grease and \$1,000,000 value of tankage.

So much for results obtained from garbage, but methods as compared with Germany show Americans to be nearly six times as wasteful. The United States produced an average of 200 lbs. garbage per capita per year as compared with 37 lbs. in Germany, in 1913. Germany puts six times less food into the garbage pail and yet takes a lot out in fats and fertilizers. It is foolish, however, to throw good food away with the hopes of recovering it again in some useful form, and that is the point to keep in mind.

Utilization of waste in cities in Canada is a matter for the cities themselves to take up. At present garbage is either burned in an incinerator or dumped into the sea or is used for filling purposes. Our present methods are frightfully wasteful, and at present when fats and fertilizers are the very breath of life, our aim should be to accomplish the following:

1. Wastes to be utilized instead of destroyed.
2. Increased meat supply.
3. Increased production of fertilizing elements.
4. Increased production of fats.
5. Decrease in cost of disposal.

Feeding garbage to pigs is now practised in a number of cities, including Worcester, Mass.; Springfield, Mass.; Providence, R.I.; Grand Rapids, Mich.; Denver, Colo.; Col-

orado Springs, Colo.; and a number of other smaller cities.

In establishing piggeries for the disposal of garbage, proper standardized methods should be adopted. Special attention must be given to housing and feeding, breeding, etc.

For every 1,000 population, sufficient waste as garbage is produced to feed and develop 25 hogs ready for the market. If garbage is disposed of by feeding, the sales of pork will show returns of from \$7.00 to \$8.00 per ton on garbage fed.

Less than one-half of one per cent of the hogs from the Worcester, Mass. piggery were condemned by United States Meat Inspectors. Percentage was lower there for Western fed hogs purchased by the same packing company.

Dr. Chaplin, Health Officer of Providence, R.I., states, after 19 years of experience in disposing of garbage by feeding, that diseases will not be caused by this source.

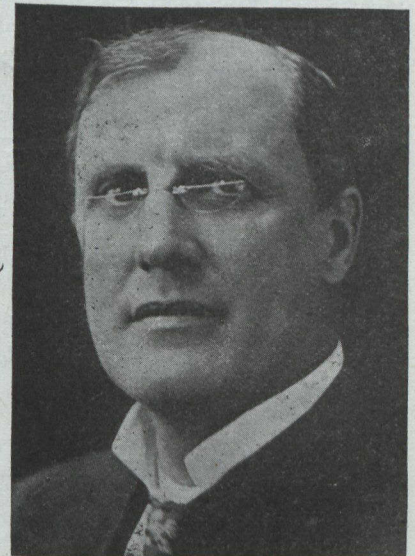
Garbage fed hogs bring the same price as other hogs.

Ninety-five per cent of the pork produced in Massachusetts is garbage fed, as reported by Dr. Cahill, of the Massachusetts Bureau of Animal Industry.

Dead animals, should, in all cities, be utilized—ton for ton, it will show greater loss of all city waste if not utilized.

MAYOR HARDIE

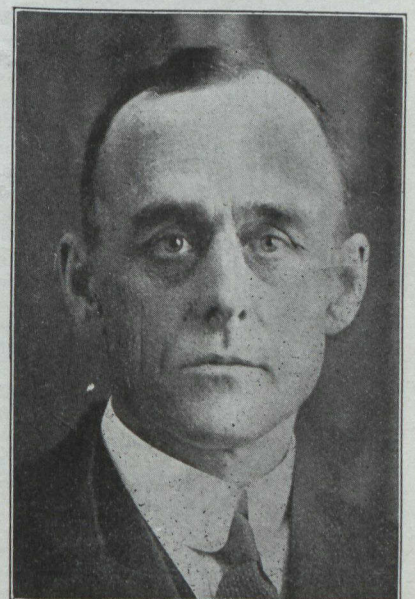
President of the Union of Canadian Municipalities who will preside at the Victoria Convention in July.



ALDERMAN R. RYAN

Three Rivers, P.Q.

First Vice-President of the Union of Canadian Municipalities.



*From a Report on Food Conservation.