

Waste in Beehive Coke Ovens

Retort Ovens in General Use in Germany—Some of the Economies Effected by Retort Ovens

Canada and the United States are far behind Germany and other foreign countries in adopting the economies resulting from the coking of coal in by-product ovens. In Germany, at the present time, little or no coke is made except in retort ovens. When the economies which may be effected by the use of retort ovens have been so clearly demonstrated not only by plants which have been constructed in Europe, but also by plants in the United States and at Sydney and the Soo in Canada, it seems difficult to understand why they are not more universally adopted in Western Canada. One of the reasons given is the lack of profitable markets for the resulting by-products.

By-Product Ovens Economical

The following are some of the economies which may be effected by the use of by-product coke ovens as against the use of beehive ovens:

First. The quality of the coke is just as good for metallurgical purposes as beehive coke.

Second. The yield of coke in by-product ovens is from 10 to 15 per cent. higher than the yield from beehive ovens.

Third. While the cost per retort oven as compared with beehive oven, is greater, the capacity is from three to six times as great.

Fourth. In retort ovens, the following by-products are saved:

1. **Gas.** With an ordinary coking coal this amounts to about 5,000 cubic feet per ton at 500 B.T.U. per cubic foot. This gas can be used for firing under boilers, running gas engines, illuminating purposes or for any other purpose for which coal gas may be adopted. If used in gas engines about 250 horse-power hours can be obtained from the surplus gas from one ton of coal.

2. **Ammonia.** This amounts to about 20 pounds of ammonium sulphate to the ton of coal charged and is worth about \$71 per ton. The ammonia may be recovered as ammonium sulphate for fertilizer or as a concentrated liquor for refrigeration purposes.

3. **Tar.** This amounts to from 7 to 9 gallons per ton of coal charged and is worth from 2 to 3 cents per gallon in the crude state. The tar is worth far more if distilled—creosote, light oils, carbolic acid and pitch being recovered. The pitch is valuable as a binder in the manufacture of coal briquettes.

Hence the total value of by-products saved per ton of coal

The Province of Ontario has six forest reserves having a total area of 17,930 square miles. In addition to these, there are two provincial parks the combined area of which is 2,075 square miles.

charged into an oven is as follows:

Higher yield of coke
—10 to 15 per cent.
coke at \$4.50 per ton
(average value for beehive coke in Western Canada).....\$0.45 to .67 1/2
Gas—5000 cu. ft. at 10c. per M..... 0.50
Ammonium Sulphate—20 lbs. at \$71 per ton. 0.71
Tar—7 to 9 gals. at 2c. per gal..... 0.14 to .18

Total.....\$1.80 to \$2.06 1/2

In 1910 Canada produced about 367,285 tons of beehive coke, valued at \$1,658,987, from 575,582 tons of coal, consequently there was over \$1,110,000 wasted in by-products by the use of the beehive ovens.

THE OYSTER INDUSTRY

(Continued from page 1)

issuing leases to the foreshore for oyster-farming purposes, and is having its foreshore surveyed so that the non-producing but potential oyster area may be divided up into plots to be leased to those desiring to plant oysters. Prince Edward Island produces the finest oysters grown anywhere and under the new conditions prevailing there is every prospect of it adding hundreds of thousands of dollars annually to the wealth of its inhabitants.

Dominion Still has Legislative Jurisdiction

Although, under the new arrangement, the provinces can secure the undisputed right to grant leases to oyster areas, the Dominion Government still retains the legislative jurisdiction over the fishery, in which it was confirmed by the Privy Council decision previously mentioned. It thus has the right to set the dates of the close season, prescribe what gear may be used, and impose other restrictions which conceivably, might interfere with the proper development of the industry. Such a possibility, however, is unthinkable. In fact, the Dominion authorities are doing all in their power to foster the rehabilitation of this once-flourishing fishery and may be depended upon to exert every effort to assist the provinces in the work of development and conservation. It is to be hoped that both New Brunswick and Nova Scotia will follow the lead of Prince Edward Island, secure the right to lease their oyster areas, then survey them and parcel them out to lessees who will thus be in a position to enter whole-heartedly into the business of growing oysters.

CROP ROTATIONS

(Continued from page 3)

1st Year.—Corn or other hoed crop. Apply manure during the winter at the rate of 15 tons per acre, shallow plough in the spring, work well before sowing.
2nd Year.—Oats. Seed down with 10 lbs. of red clover, 2 lbs. alsike, 6 lbs. alfalfa and 6 lbs. timothy per acre.
3rd Year.—Clover hay, two crops expected.

Crop Rotation No. 2

An excellent four-year rotation made up of equal areas of hoed crops, grain, hay and pasture.

1st Year.—Corn or other hoed crop. Plough previous August, manure 20 tons per acre, work at intervals and ridge up in the fall.
2nd Year.—Grain. Seed down with 10 lbs. red clover and 12 lbs. timothy per acre.
3rd Year.—Clover hay, two crops expected. Second crop may be saved for seed.
4th Year.—Pasture, or if not needed for such purpose, timothy hay.

Crop Rotation No. 3

This is for five years' duration, and contains a relatively larger proportion of grain than No. 2.

1st Year.—Grain. Plough previous August, top work and rib up in October. Seed down with the grain 10 lbs. red clover per acre which allow to grow to be turned under the following spring.
2nd Year.—Corn. Apply manure during the winter or spring at rate of 25 tons per acre, shallow plough in spring turning under both clover and manure.
3rd Year.—Grain. Seed down 8 lbs. red clover, 2 lbs. alsike and 10 lbs. timothy per acre.
4th Year.—Clover hay, two crops.
5th Year.—Timothy hay or pasture.

The New York Land Show

"Back to the Land," was the familiar designation applied to the great exhibition which was held in Madison Square Garden, New York, last autumn. It had for its avowed purpose the encouragement of the immigrant classes to engage in farming instead of herding together in the large cities.

Its success cannot be doubted. Probably never before was such a complete collection of the agricultural products of America brought together, nor such a wide interest aroused in a purely agricultural exhibition.

As a result of this initial success of the American Land and Irrigation Exposition, the officers felt warranted in holding a second show during 1912. It will be held in the Seventy-First Regiment Armory, New York, from November 15th to December 2nd, 1912. South America will also send exhibits for competition this year, so that the show will undoubtedly be larger even than last year.

Canada was worthily represented at the first show. A Canadian farmer carried off the highest prize of \$1,000 in gold for wheat. It was a sample of Marquis wheat, first produced on the Central Experimental Farm, at Ottawa, in 1903. Another farmer from British Columbia carried off the highest prize for potatoes. These triumphs have been a splendid advertisement for Canada, and it is to be hoped that Canadian farmers will this year demonstrate their ability to win out in competition with farmers, not only from North America, but from South America as well.

Nickel and Navies

Nickel Necessary in the Manufacture of Modern Armour Plate—World's Supply Comes Largely from Canada

It has just been discovered that Canada possesses the key to the European naval problem. When Schneider in 1889 introduced the use of nickel into the manufacture of steel armour plate, he little realized that he was placing in Canada's hands a great means for maintaining the peace of the world.

Battleships without nickel steel armour would be utterly helpless before modern guns. If nickel were no longer obtainable, armour construction would go back a quarter of a century.

Canada to-day produces about 90 per cent. of the world's supply of nickel. Practically all of the remainder comes from New Caledonia, an island in the south-western Pacific controlled by France.

In 1910, the value of nickel ore and matte exported from Canada to the United States was approximately \$3,450,000. As the only refineries in America are in the United States, nearly 7/8 of the Canadian nickel was refined to the south of the border. The refining process raised the value of this Canadian ore to nearly \$12,000,000. The major portion of this refined nickel is used in the manufacture of nickel steel.

Consequently, if Canada were to prohibit the export of nickel, the nickel steel industries of Europe would fall into decay, and high-grade armour plate for battleships would be an impossibility.

Naturally such a course would be a bit hard on the Canadian nickel producers, but then see what it would do to the world's expenditure on navies.

In these times of wars and rumors of wars it is assuring to know that Canada possesses such a potent weapon making for world peace.

The deep oil well drilling at Milton, Ontario, has given results which are, on the whole, satisfactory. Three new wells have been completed, and one of these was only some 1,300 feet away from the Brandon Syndicate's well in which oil was found, and which attracted other drillers, as stated recently in this column. All three new wells have proved failures. One more has still to be brought in, and should this be dry, it is likely that further efforts to get oil in this neighbourhood will be abandoned. The curious thing is that the geological conditions are in theory those of a good oilfield.

The United States silver production for 1911 was 57,796,117 ounces, valued at \$31,787,866, being less than double the amount of silver sent out by the Cobalt camp alone in the year. Cobalt's 1911 output was 32,000,000 ounces valued at \$16,500,000.—*Journal of Commerce.*