Commission of Conservation

OTTAWA, JULY, 1915

Many new beauty spots will be discovered in Canada this year by those who previously have spent their vacation beyond their own borders.

When closing up house for the summer, floor oil mops, furniture polish or oily rags should either be burned or put where they will not cause fire from spontaneous combustion.

Attention to dust prevention and ventilation in the Rand Mines of South Africa during the past two years has resulted in considerable decrease in the mortality among the natives.

Campers and others who have occasion to sojourn in or near the woods should exercise the greatest care with fire. This danger should be ever uppermost in the minds of those who have an interest in Canada's welfare.

Most accidents can be prevented, but what is each one of us doing to prevent accidents? We must not expect that care will be taken for our safety and never take thought for that of another.—*Bulletin Ontario Safety League.*

WATER WASTE DANGEROUS

A recent incident in a large American city shows the fallacy of certain arguments advanced to excuse abnormal water consumption in municipalities possessing waterworks systems. After a thorough investigation which had shown that the consumption of water was excessive the mayor of this city was credited with the following comment, "We are glad to have lots to water and waste it, for it makes . . . . . a cleaner city." The argument might have some weight if the facts quoted were true, but, as a rule, the wasted water does not contribute one iota to the cleanliness or health of the city. As a matter of fact, the official report of the city referred to shows that from 30 to 50 per cent of the water pumped is returned to the sewers unused, the waste being caused by leaking faucets and closets and carelessness in the use of water. Such wasted water does not make a city nor its people any cleaner and does not furnish any protection against disease. On the other hand, the cost of supplying and distributing this wasted water has to be paid just as if it had performed a useful function. The flow of wasted water also causes low pressure in many parts of the system, where mains are inadequate, and this shortage may cause unflushed closets and other offences against cleanliness and health, besides seriously affecting the city's protection against fire.

There are numerous safeguards against water waste. The least that should be done by the smallest water-works organizations is thorough inspection of the consumers' plumbing and fixtures. On larger systems the installation of meters is very effective and advisable, while the so-called pitometer survey will locate excessive flow or leaks in any part of the system including the distributing mains.—L.G.D.

Slaughter of Sea Birds

Having No Protection, They are Being Wantonly Killed Off

Respecting the disgraceful slaughter of sea fowl in Gaspe, a reliable correspondent writes as follows:

"A week ago today—Sunday, June 6th—an automobile load of "*sportsmen*" (?) arrived in Percé, all with guns, and were immediately taken to Bonaventure island to spend the day shooting sea birds. I was not able to get over there until late in the week but even then the talus shores were spotted with mained and winged gannets that had dragged themselves up out of reach of the surf to die. As these men did not take a single bird away from the Island and were there avowedly only for the "sport" of shooting it is obvious how wanton the slaughter was.

"It is most regrettable that the Quebec laws do not provide any adequate protection for these birds —they being neither ducks nor perching birds. The acts might be stretched to technically cover such cases but the result would be very doubtful."

It is difficult to find words to characterize adequately such inhuman slaughter of God's creatures.

Utilization of Fish Waste

One of the problems that has long confronted the operators of fish canneries is how best to dispose of cannery waste. This waste is usually very heavy. In the case of humpback salmon, it has been stated that "the waste is from 40 per cent to 50 per cent of the round weight." The waste from the "red" salmon is rather less, but it constitutes a serious loss.

According to an estimate of the United States Department of Agriculture, the waste at the Pacific Coast canneries amounted to 140,210 tons in 1913, which, at values fixed by commerical operations, would amount to over two million dollars.

The products obtained from the reduction of the waste are fish scrap for fertilizer and fish oil. An average of several analyses of the raw waste from humpback salmon showed that it contained 3.02% nitrogen, 3.46% bone phosphate and 10.43% of oil. At retail prices this would give a value of $20 a ton. It would seem desirable, therefore, to establish fish reduction plants in the neighbourhood of the larger canneries to utilize the waste.

One difficulty, however, has been that the canning industry is carried on for only a short time each year, and, as the fish reduction plants are expensive, considerable capital would be kept idle during most of the year. On the Atlantic coast of the United States this handicap has been overcome largely by gathering in enormous quantities of menhaden, a species of herring, and converting these into fertilizer and oil. Nearly 50 factories, having a total invested capital of over $3,500,000, are engaged in this latter industry. In 1912, they produced 6,651,000 gallons of oil, valued at $1,551,990, and 88,520 tons of scrap valued at $2,138,165.

Again, the kelp resources of the Pacific coast, which are being investigated by Prof. Prince, are without doubt of great value, and may possibly be exploited to advantage by those operating the fish scrap industry. In any event, the utilization of fish waste will not be an entire success until the cost of the process of reduction is lowered, or means are found for keeping the plants in operation for longer periods each year. It is a field deserving close attention from those interested in Canada's fisheries.—A.D.

USING AIR AS RAW MATERIAL

(Continued)

and allowing it to form nitric oxide from which nitric acid is made. The three different processes which have been commercially applied following this method are known as the Birckland-Eyde, the Schonherr and the Pauling processes. All three operate on practically the same principle, and unfortunately, all have a rather low efficiency, 65 kilowatt-hours being required per kilogramme of nitrogen. This represents only 5 per cent of the theoretical possibilities. The advantage of this method is that the raw material is practically free. On the other hand, the product obtained has a rather limited market; the production of fertilizers, for instance, is excluded by reason of costs unless extremely cheap power is available. As the efficiency of this method is so low and the margin before reaching the maximum is so great, we may hope for better results through efforts in the research field.

The second process is known as the cyanamide process. In this process the nitrogen is brought into contact with pulverized calcium carbide (carbide of lime) at a high temperature in an electric furnace, thus obtaining calcium cyanamide. It requires only 16.6 kilowatt-hours per kilogramme of nitrogen, the efficiency being 66 per cent. In this process the question of raw material is quite an item but the cyanamide can be used directly in the fertilizer industry.

The latter process is used by the American Cyanamide Co., whose plant, located at Nigaara Falls, Ont., is the only one of this kind in America.—L.G.D.

FISHERIES ENGINEER FOR ONTARIO

Canada is certain to be visited by increasing numbers of tourists and holiday visitors during the next few years. Conditions in Europe and in other parts of the world preclude the possibility of safe travel abroad. For this reason Canada should encourage tourists by perfecting and adding to her many natural attractions. The recent action of the Ontario Government in appointing a consulting fisheries engineer and fish culturist is, therefore, to be commended. The new official is Mr. J. B. Fielding, F.Z.S., of Barrie, Ontario, and his work will be to examine the waters of the province to determine scientifically their suitability for the various species of fishes. Special efforts will also be made to develop new and attractive fishing grounds for holidaying sportsmen. Another important branch of the new official's work will be an attempt to improve the strain of some of the Ontario fishes, which have steadily deteriorated within recent years. Mr. Fielding has an excellent opportunity for performing valuable public service.

Without good drainage even the best streets or roads soon go to pieces.

The waters of Norway, according to the latest estimate, can produce at least six million horsepower, easy to develop. Of this approximately 850,000 h.p. has already been developed.