

Commission of Conservation CANADA

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CONSERVATION is published monthly. Its object is the dissemination of information relative to the natural resources of Canada, their development and proper conservation, and the publication of timely articles on housing and townplanning.

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Fire Prevention

Lessons for Children

In the publication, *Safeguarding America Against Fire*, Vol. III, No. 9, issued by the National Board of Fire Underwriters, 70 William St., New York, there is a book trial arranged for acting by school children, in which eleven of the major causes of fire are the defendants. The part of each is taken by a pupil, characteristically garbed. Their names are: Kerosene, Cigarette, Electricity, Match, Rubbish, Gas, Defective Chimney, Gasoline, Lightning, Bonfire, and Spontaneous Combustion. The judgment of the court, however, is that all these only act according to their nature and that most of them, rightly used, are valuable servants of man. The case against them is dismissed, and the arch criminal, Carelessness, is brought into court. He has nothing to say, except that he is "an ingrained habit of the American people." He is found guilty and sentenced to be banished from America forever.

School teachers in this country might well adopt this idea to inculcate greater care among the younger generation of Canadians. Our fire waste, *per capita*, is even more appalling than that of the United States, and "taking a chance" is just as much our established habit. It is a moral trait that has its good features, but taking foolish chances with fire is not one of them. Moreover, ignorance is a great cause of fires, and the dispelling of ignorance is the school teacher's prime duty.

Canadian Parks

Canada's magnificent scenery comprises one of her proudest possessions. While such a possession should not be appraised purely from a commercial standpoint, it is, nevertheless, a conservation policy of the most practical character to take steps to assure that this natural resource be administered as an economic asset. In so doing, the Dominion Parks Branch merits recognition as a very substantial factor assisting to maintain the solidity of Canada's financial standing. It is, in addition, a foremost agency in providing sanctuaries, in administering game laws and in otherwise contributing to the practical programme essential to prevent the depletion of our wild life resources.

Fur Seals Rescued from Extinction

Skins of Old Males, Once Least
Valued, now the Most
Expensive

The most valuable herd of wild animals in the world is the fur seal herd of the Pribiloff islands, in Alaska. According to Dr. H. M. Smith, of the U. S. Bureau of Fisheries, this herd could be capitalized at \$75,000,000 and would pay a handsome profit on that capitalization. Yet ten years ago this herd was in danger of utter extinction owing to the practice of slaughtering the seals on the high seas, a procedure which brought on an acute international controversy. In 1911 a convention was agreed to by the United States, Britain, Japan and Russia, whereby pelagic sealing was stopped, in return for a stipulated share in the proceeds of the land killing. Since then the herd has so tremendously increased that, as the *New York Times* remarks, "The value of conservation has never been more swiftly or more decisively illustrated." In 1873 the herd consisted of not less than 2,500,000 individuals; in 1911 it had been reduced to 125,000; now it numbers well over 500,000, and it is fully expected that it will ultimately attain its original size.

Following the conclusion of the treaty in 1911, the U. S. Congress imposed a close season of five years. This effectively protected the herd, but it resulted in a surplus of male seals and much fighting on the breeding grounds. Of recent years killing has been resumed under the direction of the U. S. Government. Only male seals are taken, whose skins realize a handsome profit, while at the same time their killing is an actual benefit to the herd. The skins thus taken since 1917 will realize over \$7,000,000, in which sum British interests will share to the extent of 15 per cent of the net proceeds. It is probable that, in the not distant future, 100,000 surplus males may be taken annually and that Britain's share will amount to \$1,000,000 a year.

A most important recent development in the fur seal industry is the discovery of a method to utilize the "wigs" or skins of the old males. Years ago, in the London market these were very lightly valued. They sold for as low as \$3 apiece and were mostly sent to Russia, where they were used for lining peasants' houses. Recently, in St. Louis, skins of this class, properly treated, fetched as high as \$175 each, and they are now considered the best seal skins on the market.

The name "wig" was applied on account of the coarseness of the guard hairs, particularly on the back of the neck. The great weight of the "wigs" was another serious objection, some of them turning the scales at 100 pounds. Now these skins are ground thin on an emery wheel, the fur is plucked, machined and dyed, and the whole

skin made so beautifully soft that, large as it is, it can be pulled between the finger and thumb. Here we have a notable achievement in the utilization of a waste product.

The United States Government plans, however, to use every scrap of the carcasses, and a reduction plant is being erected on the Pribiloff islands. It has been proved that excellent oil can be obtained, which is especially valuable for waterproofing automobile tops. Two gallons can be obtained, on an average, from every carcass, and the oil will sell for \$1.50 per gallon. Hence, when 100,000 seals are taken yearly, it is expected that \$300,000 will be realized from the oil alone.

The Treaty of 1911 expires in 1926. It is extremely unlikely that any of the high contracting parties will wish to return to the old order of things. Had pelagic sealing continued, the herd would now have been wiped out. The practice was perfectly legal, under international law, but certainly unwise. Under the present arrangement, all the interested nations are benefited, and permanently.

This satisfactory state of affairs is a striking testimony, not only to the value of conservation, but to the superiority of common sense and arbitration over the stupid futility of an appeal to war, which always raises more questions than it settles. Again, the value of the Pribiloff seal herd may be and may become, it is not worth one day's disagreement between two great nations.

Helium Production from Canadian Gas

War-time Experiments showed Can-
ada can supply Non-inflammable
Gas for Balloons

Prof. J. C. McLennan, University of Toronto, recently addressed the Chemical Society of Great Britain on "Helium, its Production and Uses."

In the autumn of 1915 the Board of Invention and Research requested Prof. McLennan to undertake a survey of the helium resources of Canada and of the Empire and to investigate their production.

In Ontario, Prof. McLennan found the percentage of helium in natural gas to increase from 0.15 to 0.33 of one per cent as he went further west. He estimated the whole available supply at 2,000,000 cubic feet per year. In the Bow Island gas-field in southern Alberta the percentage is 0.36 and the possible annual supply over 1,000,000 cubic feet.

Following the erection of a small experimental plant at Hamilton, Ont., in 1917, new works were established at Calgary, Alta., in 1918, in the buildings of the Western Canada Natural Gas Co. A run of three days produced, in the second stage, 700 cubic feet of helium of 90 per cent purity. The

purity was finally raised to 97 per cent, 90 per cent being attainable. Prof. McLennan states that a plant could be established at Calgary which would yield 10,500,000 cubic feet of helium of a purity of 97 per cent per year at a cost of \$750,000.

During the war, the uninflam- mable nature of helium would have made it invaluable for charging airships, but, in times of peace, the small available supply will prevent its use for such purposes. When helium is liquefied, it brings us down to 271 or 272 deg. C. below zero, or within one or two degrees of absolute zero.

At the low temperatures obtainable by liquid oxygen, nitrogen and hydrogen, the heat conductivity, magnetic and other properties of substances are either stimulated to an extraordinary degree or are practically destroyed. With liquid helium available, important scientific results will undoubtedly be obtained.—Bulletin No. 31, Mines Branch.

Artificial Rearing of Young Oysters

Discovery of American Biologist
May Revolutionize
Oyster Industry

A discovery of great importance to the oyster industry is reported by the New York State Conservation Commission. Mr. W. F. Wells, biologist, has succeeded in the artificial propagation of young oysters. The eggs are obtained from the oysters and fertilized in much the same way as is done with the spawn of fish in hatcheries, and the young oysters, which are free-swimming during the earliest stage of their life history, are reared in tanks until they "set," that is, attach themselves to shells and other objects. As the great difficulty of oystermen during recent years has been to secure a good set of oysters by natural means, the importance of Mr. Wells' discovery may be readily appreciated.

Young oysters, before "setting," are very minute, and it has hitherto been found impossible to change the water in the rearing tanks without losing them. This has now been overcome by a centrifugal machine which concentrates millions of the tiny creatures from a large volume of water into a small bowl. They can then be transferred to a tank in which the water has been renewed. Though very delicate animals, their shells enable them to undergo this process without harm. About one month after hatching, the young oysters attach themselves and their free-swimming existence is over.

These experiments are important from a scientific, as well as from a commercial, viewpoint, as they provide material for the study of the life history of shell-fish, which has in the past been very incomplete.