



Cut No. 111

Look-out tower on the summit of Devil mountain, Quebec. This tower was constructed by the Lower Ottawa Forest Protective Association, which maintains a watchman at this point throughout the fire season. During the dry weather, this watchman is constantly on the lookout for forest fires.

Telephone communication ensures the prompt despatch of necessary men and supplies in case a fire is discovered anywhere in the surrounding country. This tower is located on the summit of the divide between the Gatineau and Liesse watersheds and affords a magnificent view of the country for many miles in all directions. An example of the efficiency of this arrangement was demonstrated recently, when a forest fire was located by the watchman at a distance of thirty miles. The use of the telephone permitted the fire being reported to the ranger concerned within a very few minutes. In many parts of Canada, the efficiency of forest protective work is being greatly increased through the construction of look-out towers, telephones and trails. Such improvements are greatly facilitated wherever there is co-operation between limit-holders, as in the case of the Lower Ottawa and St. Maurice Forest Protective Associations.

## Forestry in Great Britain

Experimental and Educational Work Being Conducted by Colleges

While the development of forestry practice has been slow in Canada, due to the vast quantities of virgin timber available at low prices, the developments in England have also been very slow, partly on account of the relatively small areas of Crown lands, and the large areas of non-agricultural lands held for park and estate purposes, and partly on account of the readiness with which timber supplies could be secured by importation.

A recent report of the Forestry Branches of the British Government calls attention to the fact that, until quite recently, the outstanding feature has been the absence of any form of encouragement of general forestry, aside from the cultivation of oak for

naval purposes. As the public interest in oak timber for the navy declined during the latter half of the 19th century, so the welfare of forestry was neglected until about 1880. However, no possibility of giving effect to a practical policy by means of funds voted by parliament arose until the Development Fund was established in 1909. Under this fund, educational work in forestry is being conducted, through grants to a number of colleges and universities, which are conducting research and experimental work, in addition to training men for the positions of foresters and woodmen. Advisory officers are also provided, who visit woods and advise owners as to the best methods of handling their forest properties.

A general survey of the situation shows that the total area of woodlands in England and Wales is 1,884,100 acres, of which over 95 per cent is privately owned, and is probably not producing more than one-half of its maximum yield; also that there are very large areas of uncultivated land which would produce better results, financially, from the growth of timber than from the present methods of utilization. In addition to the employment of a larger population through forestry work, there is the consideration that the total value of timber and wood-pulp imported into the United Kingdom in an average year (1912) is approximately \$180,000,000.

The area of Crown forests and woodlands is only 65,766 acres, consisting partly of the ancient hereditary estates of the Crown and partly of estates which have been acquired by the commissioners from time to time. There is, however, a very considerable additional acreage of non-agricultural Crown lands, which it is planned to reforest as funds become available. The Royal Commission on Coast Erosion and Afforestation estimated that there might be 2,500,000 acres of afforestable land in England and Wales. Most of this is in private ownership, though further purchases by the government are contemplated, for planting purposes, as rapidly as funds will permit.—C.L.

## NOVEL FOREST PROTECTION METHODS

One of the most important features in connection with the control of forest fires is their prompt discovery, thus rendering it possible in most cases to extinguish the fire in an incipient stage, at small expense and with slight damage. One of the recent developments in this work is the use of a hydro-aeroplane for the discovery of fires in the forest reserves of Northern Wisconsin. This is a lake region, and excellent results have been secured, one fire being accurately located at a distance of thirty miles.

## Purification of Water Supply

A New and Successful Process Being Used at Military Camps

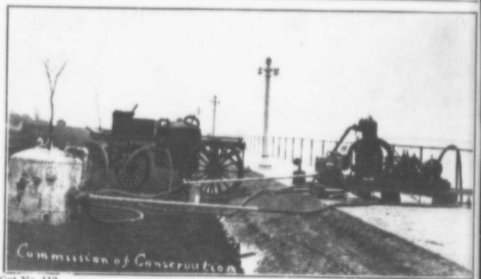
Pure water supply is a factor of prime import in the selection of a military camp. Polluted milk and water are such prolific sources of disease that the most careful supervision of supplies is necessary. The milk problem is mitigated to a large extent by the use of the condensed article. So great are the difficulties in securing fresh milk that in many camps it is an unknown luxury.

It is to the water supply, however, that attention must be mainly directed, because it constitutes the chief consideration in camp sanitation. Various means have been adopted by municipal health authorities to afford greater

being absent in 50 c.c. quantities in 90 per cent. of the samples examined) per hour have been secured for the camp from the lower Niagara river, which, only two years ago, was reported by the International Joint Commission as unfit for human consumption.

## TRAINED HELP REQUIRED

Mr. Rhys D. Fairhair, President of the Ontario Association for the Promotion of Technical Education, in an address delivered at the 1915 annual meeting of the Commission of Conservation, said: "There are probably 100,000 boys and girls in Canada of an age from 14 to 16 years who every year become engaged in occupations connected with the manufacturing, agricultural, mining, or transportation interests. The present general plan of education does not provide sufficiently for these young people. The approx-



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Ultra-violet Ray Water Purifying Equipment.

protection, and many filtration plants have been erected. In several cities, the final sterilizing agent used in treating water has been chlorine. This, however, has one objection—its varying character. When used to excess, as is often necessary, it gives the water a very disagreeable taste. Efforts have been made to overcome this, but with little result, especially in water supplies containing considerable organic matter.

Of late years the French and Austrian military authorities have been experimenting with a small, ultra-violet ray equipment with such success that, prior to the opening of the military camp this year at Niagara-on-the-Lake, Ontario, it was decided to test the system, upon a comprehensive scale. The Niagara river, the source of the town's water supply, is so seriously polluted, and such excessive quantities of bleaching powder were required to protect the camp, that the water was rendered unfit for drinking. The apparatus for the new process consists of two mechanical filters, an ultra-violet ray sterilizer and a small gasoline engine to generate the necessary electric current. Since its installation, 2,000 gallons of pure water (practically a sterile water, colon

tect system has passed, and technical education must take its place. The increasing cost of living makes it essential that these young men and women should have opportunities to prepare themselves for positions which would bring them larger incomes. Every manufacturer knows that it pays to engage trained workers at high wages or salaries, in preference to cheap unskilled labour.

"Technical education, including training in agriculture, is essential to the future of Canada. It will require a large expenditure of money, but it is vital to the progress of the nation to have its young men and women properly trained for their life work. With the exception of the war, there is no other question before the people of Canada to-day of so great importance. If Canadian workers had the requisite training, many orders, which now go to foreign manufacturers would be filled in Canada. Not only that, but such training would be a great advantage in the intelligent development of the country's vast natural resources. It is not so much a question of the lack of capital that handicaps Canadian manufacturers as it is of not having sufficient skilled help."