

Protection Methods in Canada's Forests

A Careful Description of Modern Methods of Combatting Fire in Forest Areas—How Staffs Are Organized

by W. N. MILLAR

EDITOR'S NOTE—In fairness to the author of this very excellent article on Forest Protection Methods and with a view to the progress which has been made in the development of aeronautical auxiliaries to fire-fighting forces, it may be well to point out that the omission of any reference to aircraft by Prof. Millar, is probably due to the fact that the information herein contained was assembled during the period that aerial accomplishments were much more in the experimental stage than they are at present. A very striking commentary on the use to which aircraft may be put in fighting forest fires is furnished by Capt. F. C. Higgins' article in the Aeronautical Section of this issue.

IT IS WELL recognized in Canada that forests, if they are to be kept from burning up, must have some kind of systematic protection during that portion of the year generally referred to as the "fire season." The extent of protection attempted largely depends upon the enlightenment of the owner of the timber, the value placed upon it and the fire danger or risk. This last is an extremely complex element made up of several factors which vary with the season, the character of the forest, the local causes of fire, and other local conditions which tend to favour or to obstruct the protection work. It is equally well recognized in the forested regions of Canada that the only kind of protection that has even a remote chance of success is patrol by a force of specially employed fire rangers. The patrol of timber-lands has been a feature of fire protection in certain parts of Canada for more than thirty years. In other parts it is only of recent origin, while very large areas in all parts of the country, bearing a young growth whose value and vital national importance are unrealized, are as yet wholly unprotected. A careful study of most of these patrol forces, however, reveals the fact that they are organized and operated on extremely individualistic lines. Some of the very largest operate almost without a directive staff and in no case has there as yet been developed a staff capable of making a close scientific study of this problem of fire protection, resolving it into its elements and building up on a basis of known facts a business-like organization and mode of procedure. In almost every case a forest protection force in Canada consists simply of an indefinite number of more or less qualified men hired each year for the fire season only, and sent into the woods with only the most meagre instructions. In general they are told to prevent or to detect and suppress, so far as possible, forest fires in a specified district. Between rangers even in adjoining districts there is little or no relationship. There is practically no differentiation of duties and no guidance or supervision except a very occasional visit of inspection, primarily to determine that they are actually



"THE FIRE DEMON"

present in their district and are not employed at some other work. Even this is successful only to a very limited extent because of the inherent difficulties of maintaining close personal supervision over a force which of necessity is widely scattered over a vast area of undeveloped country.

What Canada Pays.

The total annual expenditure for forest protection by all agencies in Canada is probably not less than \$1,500,000. Single agencies spend as much as \$350,000 per annum and employ 800 to 1,000 men annually. The value of the resource protected is of immense importance to the nation since fully 65 per cent of the country

is capable of producing no other form of useful commodity. This resource is the raw material for the second largest industry of Canada. From this may be gained some idea of the relative importance of a scientific study of the business of protecting forests from fire.

Analogy to Military Operations.

It requires but little knowledge of the operations involved in forest protection under conditions existing in Canada to appreciate the striking resemblances which exist between this work and military operations on a large scale. It is noted at once that there exist the same problems of transportation, of commissary and supply, of scouting and reconnaissance, of intercommunication, of camp management, and the handling of men on the fire-line. Also there are frequently involved problems in field engineering, and in animal management. Further, it is readily possible to divide the actual process of placing a forest fire under control by frontal attack, flanking trenches, or back-fires into two main sets of operations namely tactical and strategical. The present is perhaps an opportune time to point out the vital importance of organization and discipline, of special training for individual units, of perfect equipment, and of a skilled and scientific directive staff in military operations. Months, even years, are spent in training men for the least responsible of military positions and we know that an army without this highly perfected organization and equipment, no matter how individually excellent, is a pitiable thing before a modern military machine. It is little realized, however, that forest protection, which in all its essential operations bears such a striking resemblance to military operations, is susceptible of just as intensive study and development and that an unspecialized fire-ranger staff is, in its own sphere, just as pitiable an object when compared to a highly specialized staff as is an untrained ill-equipped army when compared to our modern troops.

As is well known, the extent and perfection of control maintained in