

## 5.—Forest Fires, by Causes, 1947 and 1948, with Ten-Year Averages, 1938-47

NOTE.—Exclusive of Yukon and the Northwest Territories.

Cause	Average 1938-47		1947		1948	
	No.	p.c.	No.	p.c.	No.	p.c.
Camp-fires.....	900	17	746	15	902	17
Smokers.....	1,026	19	1,164	23	1,216	23
Settlers.....	712	13	405	8	611	11
Railways.....	456	8	596	12	627	12
Lightning.....	987	18	1,022	20	967	18
Industrial operations.....	175	3	234	5	228	4
Incendiary.....	231	4	118	3	124	2
Public works.....	46	1	57	1	83	2
Miscellaneous known.....	471	9	414	8	324	6
Unknown.....	412	8	261	5	286	5
<b>Totals<sup>1</sup>.....</b>	<b>5,416</b>	<b>100</b>	<b>5,017</b>	<b>100</b>	<b>5,368</b>	<b>100</b>

<sup>1</sup> Includes Federal lands within provincial boundaries.

## Subsection 3.—Scientific Forest Research

The great forestry problem is the management of Crown forests, first under provisional and later under more intensive working plans, so as to ensure a sustained yield. Forest research activities in this direction are now assuming great importance. The Dominion Forest Service of the Department of Mines and Resources operates five forest experiment stations with a total area of 227 sq. miles.\* Here investigations of the underlying principles governing the growth of forests and improvement in the rate of increment are made and practical methods of management tested.

About 1,000 technically trained foresters are employed by the Federal Government, by provincial forest services or by pulp, paper, and lumber companies. A number of foresters are actively engaged in commercial logging operations and, in addition to administrative work, these men carry on forest surveys either for the estimation of timber-stands and making of maps, or to determine natural growth and reproduction conditions and factors.

Through the use of air photographs taken largely by the Royal Canadian Air Force and base maps prepared by the mapping organizations of the Departments of Mines and Resources and National Defence, the Dominion Forest Service has taken a leading part in the development of methods for the interpretation of air photographs for forestry purposes, (see p. 464). Provincial forest services and timber holding companies are accelerating their use of air photographs. It is now possible not only to delineate the different forest types, but also to obtain from air photographs information that facilitates the preparation of quantitative timber estimates, and greatly reduces the amount of groundwork required. Aerial photographs drawn to scales suitable for mapping purposes covering upwards of 2,600,000 sq. miles are now available in the National Air Photographic Library of the Department of Mines and Resources, and about 140,000 sq. miles of forest have been mapped and classified from the photographs. Still greater use of air photographs for forestry purposes is expected in future.

Specialized work in silvicultural research and problems connected with forest utilization are carried on by the Forest Service of the Department of Mines and Resources. On the other hand, the Department of Agriculture conducts specialized research work in the fields of forest pathology and forest entomology. Details of the programs of work under each heading follow.

\* See Table 3, p. 463.