



After the Lumbermen have gone through a bush and taken out the best timber, the brush and small trees furnish food for fire, and the ultimate result is seen in this picture. Under proper management this would be a thriving young forest.

ing the frightful waste that goes on from year to year, and of the criminal negligence which allows it to go on unchecked.

In Canada, the greatest sources of danger are the carelessness of the people who have occasion to use fire in the woods, and the railways running through the forested areas. Inexperienced campers do not realise how easy a matter it is for a camp fire to escape into the neighbouring woods and start a vast conflagration. Before starting such fires the ground should be cleared of all inflammable material for a distance of several feet, or else built where there is no vegetable material in which it may smoulder for hours, or even days, before being fanned into flame. On breaking camp, every precaution should be taken to see that the fires used have been completely extinguished. The throwing aside of burning matches or cigar stubs and the use of rag or paper gun wads are also frequent sources of danger. The only sure way to fight a forest fire is to be careful not to let it get started. Under all circumstances I entreat you to adopt this policy. Try to impress it upon others, by your own good example as well as by talking about it, and you will do far more than you may imagine to check carelessness on the part of those who camp in the woods.

The railways are another fruitful source of danger. During their construction, the burning of timber felled along the right of way is a constant source of danger—particularly in very dry or windy weather. Fires built by navvies (mostly Italian and Hindoo) to cook their meals and warm themselves are also a source of danger—particularly if built against a stump or tree. There it may smoulder for days before bursting into flame. When the railway is completed, the necessity of having a strong draught for the engines to get up steep grades projects the red-hot cinders to a great distance from the rails. The dropping of live coals from the ashpan is also responsible for the starting of many fires; also the burning of old ties and other rubbish along the right of way.

Forty years ago there was a solid forest extending from Nipigon, Ont., past Port Arthur and Fort William, and westward to within forty miles of Winnipeg. In 1870, when the troops went through that country to Fort Garry to suppress the first Riel Rebellion, the country was badly burned. In 1882, while the Canadian Pacific Railway was being built, the work of destruction was carried still further. Those of you who have travelled that route to Winnipeg know what a desolate picture the country still presents. In every province of the Dominion there is ample evidence of the havoc wrought by fire caused by the railways.

The clearing of land for agricultural purposes is another fruitful source of forest fires. Naturally this goes on in remote regions where the work of burning stump and log piles cannot very well be done under supervision. In dry or windy weather it is a particularly dangerous operation, especially when conducted in the neighbourhood of standing timber—as it generally is.



This view of one of the Rocky Mountains shows the fallen half-burnt timber after fire has done its deadly work.



Turtle Mountain Forest Reserve, once covered with small trees. The Dakota prairie fires of 1897 and 1902 have reduced it to a prairie like condition.

Photograph by R. D. Craig.

In 1894 the disastrous fires that swept through Michigan and Minnesota were started by timber thieves who wished to obliterate the evidence of their depredations. If this is not a criminal offence, I would like to know what is. Then, again, in the states of Pennsylvania, New Jersey and New York, I have seen thousands of acres of land that were deliberately burned over to secure good crops of huckleberries. Nor is our own country exempt. In the Labrador Peninsula I have seen hundreds of square miles that were burned over by the Indians to make it easier to hunt for game. Officers of the Geological Survey who are familiar with the country west of Hudson's Bay tell me that the same thing has occurred there and in the Yukon. In our northern spruce forests the danger from fire is very great. Where the trees do not stand close together the branches grow all the way to the ground. In open spots reindeer moss covers even the rockiest ground, and under the trees there is a thick carpet of mosses which at times becomes as dry as tinder. In dry seasons the mosses and the gummy tops of the trees burn with almost explosive violence, forming a continuous sheet of flame which sweeps forward with fearful rapidity—driving before it the beasts of the forest and the birds of the air. In many cases even the vegetable portion of the soil may be completely burned up. Then long periods of time must elapse before the conditions are favourable for forest growth—especially where nothing but bare rock remains. It will surprise many to learn that a light fire running through the forest and not killing mature timber is a very serious affair. Such a fire is hot enough to kill seedling growth, particularly pine, spruce and other conifers. If fires kill off the young trees as fast as they come on, what chance is there of perpetuating the forest? Absolutely none, unless we plant. Planting is a very costly operation, and only advocated as a last resort. Under proper management, fires will be kept out, the forest opened up gradually by the removal of the mature trees, nature allowed to do her own planting and a perpetual crop of trees secured.

The large sums of money spent by the different Canadian provinces and by the Federal Government for the protection of our rapidly disappearing forest wealth are being spent to good purpose. The great pity is that they are not in a position to spend even larger sums, so as to work out the most effective systems possible. Each province has a different kind of a problem to solve. The money spent in solving it is the very best kind of insurance for property of incalculable value. When all is said and done, however, it will be seen that the protection of our forest property from destruction by fire is largely a moral question. You cannot take people by the throat and make them do so and so, but you can accomplish a very great deal by getting them to realise the seriousness of the situation to us as a nation, and getting them to look at this matter of forest fires from the national standpoint. I sincerely trust that every reader of this article will do his share in the task of awakening the national conscience regarding this vital subject.