The fair analysis of the situation reveals several reasons why the railroads have been either the primary or the indirect cause of many forest fires. No reasons can be found, however, for the railroads deliberately,permitting or desiring to start fires, although such is often the popular conception of the matter. From many standpoints the railroads are the heaviest losers when a forest area burns. It takes away tonnage, both present and future; reduces summer tourist travel; and, unless the region is developed for agriculture, merely furnishes ground on which to run tracks between more productive points. Damage claims follow every fire, and alone are enough to bring about any protective measures within reason.

The past gives us little of which to be proud, so it is best to forget, save as a lesson, the semi-annual pall of smoke which has marked our forest fire losses. If we date our history some two or three years back, we can find basis for a future of greater promise. In the United States, no one factor in forest fire prevention can be mentioned without including others. The Forest Service set the pace in the systematized fire work on the national forests; while the States, the timberland owners, through their forest protective associations, and the railroads followed. To-day all are working together in closer co-operation than was ever believed possible, and the results from only two years of combined efforts are most encouraging.

To tell specifically what the railroads are doing would occupy too much time. Briefly, the measures which are proving most effective are the removal of combustible material from the right-of-way, systematic reporting of all fires which start, and prompt action in extinguishing them, regular patrol during dry seasons, use of oil-burning engines in forest regions, wherever practicable, and the keeping of spark arresters and ashpans in good condition. The clearing of land adjacent to the right-of-way is a very important development, which is permitted in Massachusetts and required by New Jersey, the latter providing for a 200-foot strip between the outer rail and a 10-foot fire-break. About 235 miles of such fire-breaks have been constructed during the past two years, with the result that the number of fires has been very greatly decreased. Where the Northern Pacific and Great Northern Railroads traverse National Forest land, 200-foot strips are cleared and maintained under a co-operative agreement between the railroads and the Forest Service.

The systematic patrol of the railroads, particularly under the direction of the State forest officials, is proving a valuable fire preventive measure. Minnesota provides for this in the new forest law; New York has required the patrol of railroads in the Adirondack region; while the Maine Central has provided a voluntary patrol. In the West, the Forest Service co-operated with the railroads in patrol work, most of the patrolmen being on the Government rolls, because of the protection afforded adjacent forest land.

The use of oil-burning engines is required by law in New York State from April to November on all roads traversing the Adirondack forests. This, however, puts a heavy burden on the railroads, and is hardly a fair or practical measure in regions remote from sources of crude oil supply. Two transcontinental roads, after extensive experiments, have voluntarily installed oil-burning engines on divisions traversing the National Forests.

The Pennsylvania Railroad and other roads operating in the more thickly populated Eastern States have to contend mainly with small fires started in woodlots, stubble fields and second-growth woodlands. These fires rarely assume serious proportions, and are guarded against by the trackmen and other employees, all of whom are under definite instructions to report fires and promptly extinguish those which start. Only one fire was reported by the State fire wardens as having been caused by the Pennsylvania Railroad during 1911, and this, upon investigation, was found to have occurred beyond the possible range of live sparks.

A striking summary of the railroad forest fire problem and most excellent recommendations for fire control were passed as resolutions at the Forest Fire Conference in Portland, Oregon, in December, 1911. It would be impossible to do better than close by quoting these resolutions:—

Whereas, The protection of the timber resources means: The stumpage value to the timber owner of approximately $2 per M. feet B.M., employment and remuneration to the wage earner of approximately $8, tonnage to the railroads both in supplies, equipment, and forest products approximately $6 to $8 per thousand, benefits to the farmer and merchant through the use of supplies, an insurance of community prosperity and the general public welfare; and,

Whereas, It is recognized that the railroads operating in forested regions are a source of fire danger menacing the preservation of this resource for use; and,

Whereas, The danger from forest fires is common to all and co-operation is necessary to meet this danger; now, therefore,

Be it resolved, That in order to secure the best results this co-operation be systematized along the following lines:—

1. Clearing up rights-of-way of railroads of all combustible material on ground; not necessary to take down trees or take out stumps unless punky, rotten or hollow.

2. Establishing efficient patrol of tracks during dry seasons, both night and day.

3. Increase efficiency of spark arresters and transforming of all engines being operated through timbered districts to oil-burners as far as practicable.

4. More strict enforcements of orders that steam be turned on all ashes dumped from engines. Stringent enforcement of orders that no ash-pans be dumped while train is in motion.

5. That orders be given expediting the furnishing of men from road gangs and section crews.

6. Reports of all fires by all train crews at first telegraph or telephone station.

7. Sharing expense of patrol by railroads.

8. That association, Federal and State organizations furnish their regular employees within their respective territories to assist in fire patrol.

9. That authentic information of the condition of railroad rights-of-way, the methods used under different conditions, and of all fires originating on or adjacent to the right-of-way be obtained by Federal, State, and private organizations in order to present definite data to effect improvement in methods.

10. That this situation be kept before the railroads, the organizations interested in fire protection, and the general public, in order to ensure a practical working out of these recommendations.

I have been asked to say a word in addition as to what the Pennsylvania Railroad is doing in relation to forestry The main line of the Pennsylvania Railroad runs through a hardwood country, mostly second-growth hardwood, where the lumbermen, in the early days, took off most of the valuable timber. The railroad has some thirty thousand acres on which a start has been made in exploiting the timber on a commercial basis. Work has been done on some fifteen properties, and after our logging operations these properties are in a much more productive state than before. The work has been done on a much more economical basis than by lumber companies in Pennsylvania, and the net profits have been approximately $19 per acre. This has been done by