woods which gradually take up all the ground. In Sweden planting is just as much a part of their woods operations as is logging, they consider the two as part of their management of the forests.

There are thousands of acres in Canada which are unfit for agriculture and nearly always such areas can be found in reasonable proximity to our mills. Why not plant up such areas with valuable timber trees, aiding nature wherever she has made a start? Fire protection and management being over smaller areas would be cheaper and more intensive. Long drives, often taking two years, would be avoided, transport of men and provisions long distances would be done away with, local populations of men trained in woods work would be built up, as in Europe, logging costs would be much reduced as with the larger stands per acre, the use of logging machinery would be possible, and owing to the nearness and accessibility of the forest such large reserves of logs would not have to be carried with the large outlay for insurance and fire protection and interest on money tied up.

Will Planted Forests Pay?

A planted area of 250 square miles on a rotation of 50 years, that is five square miles cut clean and replanted each year, would yield 100,000 cords per annum in perpetuity, while it would take 1,302 square miles of natural forest to yield the same amount on the same rotation if the amount removed at the first cutting could be removed at the end of fifty years from the same area and this does not, in the light of our present knowledge seem possible. If the cost of carrying virgin timber lands to supply a cut at the end of forty years is figured it will be found that the cost per cord at the end of that time will be more than with planted trees and that the virgin stand will be steadily deteriorating through over maturity and insect damage while the planted stands will increase steadily in value year by year as they grow.

The great bulk of the timber in Canada belongs to the people at large and the cutting rights are leased to individuals and corporations. When this timber is cut should not the Governments make proper regulations for cutting and replanting so as to perpetuate and increase our timber supply? Canada's future economic welfare depends on the perpetuation of her forest resources. This can best be effected by proper utilization and by hastening nature's slow and wasteful methods of forest renewal by artificial regenera-

THE IMPORTANCE TO THE PULP AND PAPER INDUSTRY OF CONSERVATIVE FOREST MANAGEMENT

By Percy B. Wilson; President, Canadian Pulp & Paper Association. Vice President, Spanish River Pulp & Paper Mills Ltd.

The forest is the foundation upon which the pulp and paper industry is built. Without available raw material, the established plants, so important to the welfare of the Dominion, must cease to function. It is essential that the mills already existing shall be supplied with wood, sufficient to meet their annual requirements. It is inconceivable that responsible executives should exploit a National inheritance of this matter without taking thought for the future prosperity of the country, or the industry.

When the pulp and paper industries of the country were established, it was felt the supply of raw materials was inexhaustible. Development of the natural resources, employment of labor, liquidation of the National assets of wood and water-power were the important factors to be considered. The capacity of the mills established was predicated upon the power that might be developed, and the capital available for investment, rather than upon the volume of wood that a definite area would yield annually forever.

The demand for Canadian pulp and paper products increased when the supply of available pulpwood in the United States began to show signs of depletion and the expansion of the Canadian Pulp and Paper industry followed. The larger mills demanded more extensive woods operations; with expanding woods operations, the cost of pulpwood constantly increased. Attention was then centered upon wood supply. It was realized that the quantity of **available wood,** rather than the total amount of wood in the Dominion, was the index of continuity of supply.

The quantity of wood available for any established plant is limited to the wood on the area from which the mill may draw its supply within certain limits of cost. Without devising means for the perpetuation of this supply, it is evident that the quantity will be exhausted in a given period, depending upon the extent of the area cut over annually.

Since the pulp and paper industry represents an enormous investment in mills and the necessary accomodation for labour, the latter involving in many cases the building up of new towns in the wilderness which, once established, cannot be moved, it is essential that the forests which supply the mills shall be perpetuated. This can be accomplished by no means except conservative forest management. Conservative forest management includes protection of the forest against fire, utilization of all wood in the stand that it is economically possible to use, and the introduction of systems of cutting that will insure regeneration of the stand.

As present investment is necessary to insure future income, the pulp and paper industry must invest in conservative forest management at once, if it is to continue in prosperity. The strenght of a plant must eventually be measured—not by the quantity of power developed, nor by the number and size of its producing machines, but by the proper relationship of the annual requirements of wood, and the annual yield of the forest, that it controls.

Forest exploitation promises closed plants, impoverished communities and the destruction of an important National asset.

Forest perpetuation through conservative forest management insures the continuity of the mills resulting in prosperous communities and permanent enjoyment of a rich inheritance by the Nation.