

High Priced Coal Scraps Old Plants

Modern Steam Power Plants Are Three Times More Efficient Than Older Types

We are possibly just as wasteful of coal as is the United States, where, according to V. H. Manning, Director of the United States Bureau of Mines, fully \$500,000,000 worth were wasted last year through inefficiency in use. Notwithstanding the higher efficiency rendered possible by the constant improvement of modern power equipment, the waste is increasing and the higher price of the commodity is subjecting the country to a still heavier penalty. Every pound wasted is that much less available to put into energy to win the war.

In the modern, efficient power plants, 20 per cent of the heat in the coal consumed is converted into power, whereas in small power stations the efficiency frequently drops below 10 per cent. It is quite probable that, on the average, only about 5 or 6 per cent of the energy of the coal is transformed into useful energy ready for distribution. Were it possible to increase the average efficiency to something near the maximum now attainable, about three times as much energy would be available for the productive industries of the country. The increasing price of coal is causing many old, inefficient steam power plants to be replaced by modern ones that convert a higher percentage of the fuel consumed into power.—L.G.D.

Ontario Forestry

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rangers, assisted by 31 sub-chiefs rangers. These men provide the immediate field supervision over the 986 rangers who do the actual patrolling and fire-fighting.

For the most part, the rangers work in pairs, travelling by canoe, and carrying their camp equipment and supplies with them. The general shortage of men, due to the war, has rendered it difficult in many cases to secure rangers. Much care has, however, been exercised to secure only competent men, and to weed out those who prove to be unfit for the arduous duties. The chief rangers and the sub-chiefs are in constant personal touch with their men, and the staff is rapidly improving in efficiency and teamwork.

Communication and transportation, both of prime importance, have been greatly improved. Some 915 miles of old trails and portages have been cleared out, and 60 miles of new trails and portages constructed. Thirty-one lookout towers, from 24 feet to 80 feet high, have been built, and 22 more are under construction. Thirteen rangers' headquarters' cabins have

been built, in addition to the repair of old ones. About 45 miles of telephone line have been erected. Five automobile trucks with fire-fighting equipment have been provided for districts where settlement is under way and passable roads exist.

The permit system of regulating settlers' clearing fires has been put into effect in the Clay Belt and is working very well. Over 1,200 permits have been issued to date. Its enforcement will no doubt greatly reduce the amount of fire loss in Ontario as it has already done in Quebec, British Columbia, Nova Scotia and New Brunswick.

A change of policy of prime importance has been made effective this year, in that the work of fire prevention and control is no longer restricted to lands under license to cut timber, or to forest reserves and parks. On the whole, all these are being given better protection than ever before, but, in addition, protection is being furnished over large areas of unreserved and unlicensed lands, containing enormous amounts of young forest growth, which will now have an opportunity to reach merchantable size while timber of merchantable size elsewhere is being exploited.

Last year the area of land under license to cut timber was 15,712 square miles. A fire tax of one cent per acre per year has been levied by the Government and should yield a revenue of upwards of \$110,000. To this the province adds a sufficient sum to bring the total forestry appropriation up to about \$375,000. The province can well afford this expenditure for the conservation of its forest resources, for last year the forest revenue amounted to \$1,335,320. This is a decrease of nearly \$200,000 from the previous year and is directly attributable to the war. Under normal conditions, the annual forest revenue will average from \$1,500,000 to \$2,000,000.—C.L.

THE FUTURE OF THE HORSE

As far as the light-legged horse is concerned, he is practically doomed. The motor car has taken his place. Although still of some use in courtship, he will go out of business as soon as the self-guiding car comes to the market.

For a number of years the heavy horse will be in demand. He is keenly in demand at the present time. Prices were never so high. After the war is over, there will be a great demand for them in the countries now ravaged by war.

I have in my possession an official publication from the Belgian Government giving many harrowing details as to what happened to the Belgian horses. The brood mares and foals running in the fields were slaughtered, being often used as targets by the German soldiers. One pure-bred stallion, valued at \$10,000, was burned up

in his box while the groom and his wife and children were forced on their knees to watch the agonizing death of the noble animal. Then, the Germans realized that they were making a mistake in destroying these valuable horses and began to ship them to Germany. They sent their experts to select the best individuals, giving to the Belgians for payment orders on the Republic of France, payable at Paris. These orders were in German and were often for the most trifling sums.

I have had interviews with representatives of all the large cartage companies in our cities and they say that, so far as they have gone in trying out the motor trucks, they have found the horse much more satisfactory and economical. Whether the development of the motor truck, which, until comparatively recent years, did not receive as much attention as that of the passenger car, will be taken up with energy enough to make it sufficiently economical to supersede the horse, I cannot say. The heavy farm tractor is a thing of the past. The light farm tractor has come in to stay. So far as the horse business is concerned, a man can continue to breed heavy horses without any risk of market failure for at least ten or fifteen years to come.—Dr. J. G. Rutherford, before the Western Canada Irrigation Association.

NOW IS THE TIME TO SELECT SEED CORN

Now is the time to prepare for the selection of the seed corn. The world is crying for increased grain production. One of the least expensive and easiest ways to help increase production is by the planting or sowing of the very best quality of seed. Before cutting commences is the best time to select the ears of corn for seed.

Go into the field with a bag, and from the strong sturdy hills with large perfect ears, choose the best. Select more than you will require to plant your crop next year. Before planting time a second selection can be made of the very choicest of the ears already gathered. After being gathered, they should be carefully and thoroughly dried and stored in a dry place. Plan now to select in this manner and to have a proper place in which to store the seed.—F.C.N.

The Spanish River News and Safety Bulletin, published by the employees of the Spanish River Pulp and Paper Mills, Ltd., announces the award of prizes, ranging from \$5 to \$25, by the company for the best gardens and also for the best lawns of employees at the various mill centres. This, like the publication of the bright little house organ, is a mark of progress to be emulated.

Big Shortage of Trained Foresters

Forestry Work is Suffering from Lack of Experts

The most striking feature of the forestry situation in Canada today is the extreme shortage of trained men available for the technical work of forest administration and research. The forestry profession no less than others, has answered the call for overseas service, and a high percentage of the graduate foresters of the Dominion are engaged in Europe in the defence of the Empire.

This profession was only beginning to get on its feet in Canada and had, thus far, developed only a very small personnel in proportion to the actual needs of the country. The result of the heavy enlistment has been that the various forestry organizations have, as to supervisory staff, been reduced practically to a skeleton basis, leaving to the utmost the efforts of a few remaining technical men to hold the ground already gained.

Similarly, as in other departments of university work, the forest schools have been largely drained of under-graduates so that for years to come the normal number of graduates available to help build up forestry organizations will be sufficient to fill only a fraction of the real need.

All this indicates that, for some years, we must anticipate that, taking the country as a whole, material progress in forestry will be made with difficulty and only as a result of strong and well-planned effort. This is especially true as to research work, since when an organization charged with routine administration becomes short-handed, the routine must receive attention, and there is little opportunity for development along research lines, unless a special organization exists for this purpose alone.

Obviously, if continued progress in forestry is to take place in proportion to the need, a very special and well-supported effort, supported strongly by appropriate governmental and private aid, must be made. This applies to research as well as to additional facilities for the training of men.

The Japanese are a nation of fishermen, and their diet is principally fish. A hardier, healthier race does not exist.

Dr. C. MacLean Fraser, director of the biological station at Nanaimo, B.C., has been elected vice-president of the Pacific Fisheries Society.

The Japanese government issues insurance policies up to \$124,000 which no medical examination is required.