

Increasing the Flax Output

Care in the Field and Mill, Together with Proper Grading Ensure Greater Profits

In a recent article in the *Scientific American*, Mr. J. A. McCracken refers to the abnormal prices that have been obtained for flax fibre since and as a result of the war. The writer offers several valuable suggestions to assist flax mill operators to increase the efficiency of their plants and to secure the full advantage of the present high prices. Ordinarily there is a very wide range in the prices received for flax fibre; varying skill and attention create a difference of from \$200 to \$500 per ton in final returns. Given efficient labour, only minor factors and small outlays are involved in producing fibre that will command the highest market price.

Timely and careful harvesting is the prime factor. By setting pullers to work before the customary time, the danger of labour shortage is minimized and the enormous gain in the quality and yield of the fibre, in the fields that are harvested last, much more than offsets the loss in the yield of seed. The late harvester finds his last fields in the process of deseeding and in second green before their turn comes to be harvested. Grading should be commenced in harvest by paying pullers extra to make two or more separate lots, according to quality. An expenditure of 50 cents per acre for this purpose is a profitable investment.

The system of retting is of very great importance. Irish and Canadian flax, as grown, differ little in quality but the former is water-retted while the latter, except for one departure to date, is dew-retted. The chief advantage of water-retted over dew-retted fibre is one of uniformity. In dew-retting, also, the operator is practically at the mercy of the weather. The respective merits of the two systems are indicated by the fact that water-retted Irish flax brings 36 to 43 cents per pound, and Canadian dew-retted flax from 16 to 25 cents.

The only Canadian water-retted flax, produced by Howard Fraleigh at Forest, Ont., sold for 45 cents per pound on the New England market. This product did not receive the complete advantages of water-retting but only those of mixed retting, being treated half-way in tanks and the balance of the process on the grass as in dew-retting. Immediately after pulling, the flax was placed in two concrete tanks, each 25 feet long, 15 feet wide and 4 feet deep, and the mass weighted to prevent the straw from rising. In ordinary July and August weather four or five days is usually sufficient to dissolve the adhering gums so

that the fibre can be extracted. When the retting operation is about half finished the water is drained off and the flax carefully transported to an adjoining meadow and spread evenly in rows as for dew-retting. The additional time required varies according to the condition of the flax and the state of the weather. In the case of the 45-cent fibre produced by Howard Fraleigh, however, the straw had practically completed retting in the tank.

In actual practice the removal of the fibre from the encumbering woody chive has most bearing on the final returns. Proper scutching, which depends essentially upon efficient labour, produces a high percentage of first quality fibre. In a mill with a trained scutching force, the two average about ten per cent, whereas, in a mis-governed plant, it may run as high as thirty per cent. As the prices obtained for tow products are extremely low as compared with those for dressed fibre, every effort should be made by preliminary grading, proper retting and efficient scutching to reduce the percentage of tow; flaxes of various qualities should be distributed in respective grades. The skillful grader at the Forest mill makes half a dozen lots which are baled separately for shipment. Grading increases the returns by between 15 and 20 per cent.

DISTILLATION AND BRIQUETTING OF LIGNITE

Manitoba, Saskatchewan and Alberta contain many millions of tons of sub-bituminous coal and lignite but the comparatively low heating value of this coal and the fact that it disintegrates rapidly when exposed to the air prevent its economical transportation for any considerable distance. In fact, these provinces are now supplied almost entirely by coal from the Crownsnest district in Alberta and British Columbia and from United States.

In a plant in Denver, Colorado, with a capacity of 500 tons of lignite per day, lignite is distilled, the by-products are saved and the residue is manufactured into briquettes. These briquettes are of very good quality, and are suitable for domestic or railway locomotive purposes.

The lignite is charged into ovens having a capacity of 10 tons each. The ovens are heated by gas flame between the walls, and distillation is carried on for about two hours without the admission of oxygen from the atmosphere. During distillation about 100,000 cu. ft. of gas, 130 gals. of tar and 25 lbs. of ammonium sulphate, are removed per 10 tons of lignite. Benzol is removed from the gas and the gas is cleaned by electrical precipitation.

While the raw lignite only contains 55 per cent of fixed carbon, the briquettes average 84 per cent.—W.J.D.

Wide Use of Electricity

New Appliances Increase Adaptability for Domestic Purposes

The use of electricity in the home is gradually developing. Its original limited utility as a source of light has been extended to the supplying of energy for the electric iron and toaster, the sewing and washing machines and the vacuum cleaner. Electric ranges are coming into general use. The first objection, the relatively high initial cost of the range, having been overcome.

A domestic use to which electricity seems admirably adapted but which, thus far, has received insufficient attention is that of providing hot water. In many Canadian homes, the furnaces or coal ranges are provided with attachments to supply hot water for the kitchen, bath-room and laundry during the winter months. As the furnace remains unused from the middle of spring and coal ranges are not regularly used during summer, the supply of hot water throughout the house is lacking in quantity. Supplying this service by electricity is a great convenience to the householder, and, at the same time, opens a new field for the desired summer load to the central station or other organization dealing in electric energy.

Several central stations, aware of the benefits to be derived from such a load, have introduced special systems of charging for this service. In Toronto, one organization has an arrangement with one small (500 watts) and one large (2,000 watts) heating unit; the idea is to charge for the small unit on a moderate flat-rate basis and keep it operating constantly for ordinary domestic needs, while the large unit, which need be used only for abnormal requirements, such as laundering, is charged for at a low meter rate. The cost of the installation, including jacketed tank, plumbing, etc., is \$50.00. In the United States units of 750 and 1,000 watts have been found satisfactory. Many companies do not meter the consumption of the hot-water heater, charging a monthly flat-rate for this service. These companies have also been encouraging the "cooking-by-wire" movement; usually, it is stipulated that water-heater and range are to be served through the same double-way switch so that both the range and the heater are not operated at the same time. The water heater is usually kept on continually except when using the range; thus, the boiler is heated over night and, if properly jacketed with non-conducting material, remains hot enough through the day to supply the demand while the range is in service.—L.G.D.

Pruning of Trees

Useful Suggestions for This Necessary Treatment

Always use a pole saw and pole shears on the tips of long branches, and use the pole hook in removing dead branches of the alantinus and other brittle trees where it would be too dangerous to reach them otherwise.

Do not "head back" or cut off the top of a tree except where the tree is old and failing, and then under special instructions.

Be as sparing and as judicious in pruning as possible, and do not make the branches so high as to raise the tree look like a telegraph pole.

Commence pruning the tree from the top and finish at the bottom.

Make every cut as close and parallel to the trunk as possible.

To make the cut perfectly smooth the saw must be well set and sharp.

Leave no stubs, dead and dying wood, or fungus-covered branches behind you.

Do not fail to cover every wound with coal tar, not allowing it needlessly to run down the trunk.

Do not remove several large branches on one tree at a time. They must be removed gradually, the work extending over several seasons.

Prevent tearing the bark off the trunk in removing large limbs by first making an "undercut."

Make the cuts on a slant. Some trees, like the elm, sycamore, linden and willow will stand the process of heading back more than others, and the poplar is a tree that must be cut back every few years to keep its crown from becoming too tall and unsafe.

When shortening a branch, leave a few twigs at the end to draw the sap to the freshly cut wound and thus enable the growing layer under the bark to heal it over.

In trimming small branches or shoots, the cut must be made just above a bud.

When several branches come out from the trunk in a whorl, they should not all be cut away at the same time lest the tree be girdled. This arrangement of branches occurs most frequently in the coniferous trees.—*American Forestry*

TOWN PLANNING APPROVED

The National Fire Protection Association, at its convention in Chicago on May 9-10, made the following recommendation: "The association heartily commends the growing movement for city planning, as likely to produce better conditions as to building heights and congested areas and provide the open spaces and broad avenues, which, besides their human and aesthetic values, are excellent checks to sweeping fires."