

caused by war, labour registries cannot hope to provide employment for all who want work, for the simple reason that many industries find it necessary to curtail and, in some cases, to cease operations entirely. Under such circumstances "distress works" might be put in operation during the winter months. Even in the severe Canadian climate there are numerous municipal and national public works that could be carried on during the winter. Such work should be undertaken, in large part, by the provincial and the federal governments, as it is scarcely just to require the municipalities to bear all the burden resulting from unemployment. Moreover, the central authority, whether provincial or federal, is in a better position to check the inrush of unemployed to the towns. It is an axiom everywhere, that industrial workers and labourers usually prefer to remain on the verge of starvation in the cities, rather than tide themselves over a period of unemployment by seeking for work in the country. Again, the central governments are able to encourage industries to keep their plants in operation, either in the manufacture of their regular lines of goods or of some others which were hitherto imported.

At the same time, the financial burdens imposed by the war and the difficulties certain to be encountered in raising loans will make it impossible to carry out all works advocated by philanthropic organizations and individuals.—A. D.

Drought Tests Forest Fire Protection Plans

The efficiency and resources of all forest-protective organizations in Canada have been put to a severe test this year by the prolonged drought which prevailed throughout the greater portion of Canada during the early part of August. It seems probable that 1914 will be recorded as the worst fire year since 1910. The situation in southern British Columbia has been very serious, and great areas have been burned over in Alberta, on the east slope of the Rocky mountains. Northern Ontario also has suffered severely.

The railways are no longer the chief source of forest fires, and the necessity for a stricter control of the setting of fires by settlers for clearing land, is becoming increasingly apparent. Also, in many sections, especially on cut-over lands, where most of the fires originate, the establishment of a more adequate patrol system is essential to protect young growth and prevent the spread of fires into old timber. The extension of the merit system in the appointment of fire rangers in the services of both the Dominion and Provincial governments is necessary if the best results in fire protection are to be secured.—C. L.

Ploughing Now a Neglected Art

Advantages of Taking Special Care with Fundamental Farming Operation

The art of ploughing, if not lost, has certainly been much neglected during recent years and very few of the younger generation of farmers have really acquired it. In travelling through the country one sees repeated evidences of the lack of interest in this very important branch of tillage operations. Ploughing, as the first and heaviest operation in preparing the soil to receive the seed, should receive particular attention.



GOOD PLOUGHING



GOOD PLOUGHING PACKED AND WELL WORKED



GOOD PLOUGHING WORKED DOWN BUT UNPACKED



POOR PLOUGHING

Can No. 72

Many attribute the present-day lack of interest in ploughing to the advent of the two-furrow and machine plough. In using two-furrow or machine ploughs, it is necessary first to acquaint oneself with the workings and mechanism of the plough, to be thoroughly familiar with it when in operation; little or no difficulty will then be experienced in obtaining satisfactory results. A plough suitable to the soil should be chosen. If the soil is loamy, and requires to be turned flat, choose a plough with sufficient width of share, a board with ample turning capacity, a beam high enough to permit the use of the jointer when turning under green or coarse manure, and sufficient length of handles to enable the ploughman to control it with ease. If the soil is heavy and inclined to cement, use a narrow plough—one that will set the soil up, give a good harrow edge, and have sufficient press to the board to place the furrow over so that it will not fall back. In using either a single or two-furrow plough, care should be taken to turn over the whole furrow and to leave no part unploughed. Get away from the cut-and-cover plan. Teach the boys that anything worth doing is worth doing well, especially ploughing. The old adage that more grain grows on crooked furrows than on straight ones is a poor incentive, and is not helpful in

building up a reputation as a model farmer. Plough the back field as carefully as the field adjoining the road, and see that all fields are ploughed in such a way as to attract attention by their neatness. It is cheap and efficient advertising. Good ploughing pays; if a fair crop can be grown on a field which has been poorly ploughed, a better crop can be grown on a well ploughed field.—F. C. N.

Reclamation of Alkali Lands

Nature of the "Alkali" which is found in some parts of Western Canada

In some semi-arid regions in Western Canada, tracts are found where the soil is rendered barren by being impregnated with an excess of certain alkaline salts. These "alkali lands" are more particularly situated in parts of British Columbia and in south-western Alberta, but patches are found also in Saskatchewan and in Manitoba. With the increase in land values in the grain-growing prairie regions and in the fruit-raising valleys of British Columbia, the problem of the reclamation of these lands assumes a more pressing and practical aspect. That they can be reclaimed is, in most cases, tolerably certain, but reclamation is improbable where the expense involved would exceed the value of ordinarily good land.

Besides the alkali lands which naturally occur, others are liable to be formed through the injudicious use of water in irrigated districts, and it is very important to take precautions in order that these otherwise highly fertile lands may not be ruined. The so-called "alkali" consists of various salts, chiefly the sulphates and chlorides of sodium and magnesium, forming what is commonly known as "white alkali," and carbonate of sodium, which forms "black alkali" and is much more injurious to plant life.

Soils containing these salts are frequently met with everywhere, but do not tend to accumulate near the surface, except in dry regions, where, after being dissolved in the soil water and brought up by capillary attraction, they remain after the evaporation of the water. The salts, except the carbonate, are injurious only when present in excessive quantities. In humid regions, where drainage, rather than evaporation, is the principal factor in removing surplus soil water, no dangerous accumulation of these salts takes place. Moreover, there is more water in the soil, and consequently even though there be an equal quantity of salts, the strength of the solution is weaker and plant life is not injuriously affected.

Underdrainage and Cultivation

In dry areas, even where irriga-

tion is practised, it is impracticable to keep the soil any moister than is required for the successful growth of vegetable life. But, by a system of tile underdrainage, it is possible to cause the water to carry the excess of salts into the deeper layers of the soil, and thus overcome the dangerous accumulation near the surface, which seeds must germinate. This is especially important in some irrigated districts where alkali is making its appearance on lands that were formerly free from it, as in the Yellowstone Valley, e.g. near Billings, Mont., the lowest irrigated land is being ruined in this way due to seepage probably being injudiciously irrigated lands impinge up. An efficient system of underdrainage to carry off the surplus water is urgently needed.

In dry farming districts, manure can be done to reclaim alkali lands by extra deep ploughing, and by thorough cultivation to form a mulch on the surface and reduce evaporation. The application of manure is also very beneficial, because it gives the young plants a ready supply of available material, improves the texture of the soil, and acts as a mulch to check loss of water through drainage.

ECONOMY OF WIDE ROADS

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estimate for the 120-foot road includes the cost of the extra 40 feet of land used for tramway purposes. These circumstances are a course special to a certain extent. Instances might occur where the reconstruction of the old road would be necessary in either case. But even then the only extra cost per yard in making the wider road would be one-eighth the difference between £615 and £6168, or cost per yard of the tramway.

In this case the important point is that it is much cheaper for the Liverpool corporation to make a road 120 feet wide than 80 feet wide. All the ultimate advantage to the city are therefore added to the immediate gain. The latter, however, is not limited to the saving of cost. In Liverpool they are finding out that these wide planted roads are having the effect of keeping the homes of well-to-do citizens within the boundaries. Those who will erect large houses in narrow interesting tramway routes are building them on the space highways which Mr. Brodie is constructing. Liverpool has a long time suffered from the migration of its large ratepayers into outside districts. This only increases the rates all round in consequence of lowered rate value, but removes from the city those who, while in residence subscribe to its charities and interest in its social life. The policy of making wide roads with grass margins is helping to retain these well-to-do inhabitants within the city limits in one of the indirect advantages which Liverpool claims.—T. A.