

Care is Needed in Planting Trees

Causes of Failure in Planting—Points to be Observed in the Handling of Nursery Stock

How many attempts at planting shade or ornamental trees have been failures, in whole or in part, and how many times is the tree-planter at a loss to understand the cause of his failure? The following discussion by Dr. B. E. Fernow, Dean of the Faculty of Forestry, University of Toronto, will throw much light on this problem, and should assist many who will plant trees next spring or fall.

The first cause of trouble and of death in transplanted trees is not infrequently to be found in the ignorance and lack of care exhibited before and during transplanting. Many trees set out are dead or are doomed to death before they reach the plant hole. *Transplanting a tree from one site to another is a surgical operation during which the patient needs special attention.*

Feeding System Impaired

It is rarely, if at all, possible to take up all the fine rootlets with their root-hairs intact; these adhere closely to the soil particles, hence, in the attempt to remove them, a portion of the feeding apparatus is always mechanically destroyed. Next, the delicate root-hairs, and fibrils are apt to dry out when exposed to the air, especially in windy, sunny, dry weather, and thus another portion of the feeding apparatus is lost. Lastly, with larger specimens, the far-lying roots can practically not be reached and a third portion of the root system is cut off. Furthermore, if the plant material is shipped any distance, the vital activities are interrupted, temperature and moisture conditions may be unfavourable during transshipment, and a partial drying out of roots, buds, or foliage is the consequence.

As a result of these losses, the balance between crown and root, between consumption and supply of water, is disturbed, and, unless this balance is at once re-established by pruning at the top and by favourable conditions for replacement of lost parts at the root, a part of the crown must die.

How to Transplant Trees

This trouble may be nearly or entirely avoided by transplanting with a ball of earth, when the root system is not at all disturbed. This is usually practicable only with small trees; as a rule, transplanting is done with the naked roots. Care should then be had to take up as much as practicable of the root system, keeping it intact, using a fork rather than a spade, and keeping in mind that the *root tips are the important part*, then the roots should be immediately protected against drying out by covering with moist soil, wet bagging, moss, etc., and be kept moist until the tree is reset.

If it has not been possible to secure the entire root system prac-

tically intact, then a proportionate amount of the crown system should also be removed by cutting back branches, using at the same time the opportunity for correcting the form. This pruning is best done just before setting the tree, or, more conveniently, at once after setting while the knowledge of the conditions of the root system is still fresh in mind. If it is neglected, parts of the crown will die, and these may not be the parts we are willing to spare. It does not matter much if the pruning at the top is more severe than necessary; sparing the knife unduly matters much more.

Nursery stock, when received, should be opened at once in a shady, cool place and the root packing examined. If it is dry and hot, the chance of securing a living plant is small. Nevertheless, by proper treatment, plants may sometimes be resuscitated; some species especially will stand a good deal of maltreatment and are able to recover. "Heeling" them in deeply in a trench under shade and in fresh soil, and drenching them thoroughly with water, keeping them drenched for a day or two, or even keeping them entirely submerged under water may restore what appeared quite hopeless material. Even if the leaves of conifers have suffered, so long as the buds are still fresh looking, the case is not quite hopeless provided proper care is applied in keeping roots and tips moist, and, especially, if rainy weather sets in.—C.L.

Mine-Rescue Work in Canada

The Commission of Conservation will shortly issue a report on Mine-Rescue Work in Canada. The report which was compiled by W. J. Dick, M.Sc., summarizes from an historical stand-point, the growth of the use of Mine Rescue apparatus in Europe and in the United States. A summary of European and American mine-rescue legislation is given.

British Columbia is the only province in Canada that compels the installation of mine-rescue equipment at coal mines. However, some of the mine owners in other provinces have installed them on their own initiative. These stations are fully described in the report, which is illustrated by excellent half tone plates. The report should arouse a more general interest in the prevention of coal mine accidents in Canada.

A by-law was recently passed by the Council of the city of Toronto, limiting the height of buildings in the city to 125 feet. This is a step in the right direction. It is not too much to hope that the future will see restrictions, limiting the height of all buildings to one and one-half times the width of the street on which they are erected.

The Prevention of Occupational Disease

The Relation of Occupation to Disease—What is Being Done to Make Clear this Relationship

In spite of the importance of industrial processes and labour conditions upon the health of the community, our knowledge and statistical data are meagre, and this is due largely to the following causes:

(1) With few recent exceptions, occupational diseases are not under the law reportable to the health authorities. (2) Physicians are not sufficiently familiar with industrial processes, or even with the processes in trades designated as dangerous, so that they fail to recognize the relation of morbidity to occupation. (3) Statements of occupation on morbidity and mortality records are too general or inaccurate to be of any great value. (4) Inspection of industrial establishments is, as a rule, carried on by men entirely unfamiliar with health matters. (5) There is a lack of realization, both among employers and employees, of the dangers involved in certain processes.

Massachusetts has now for seven years carried on careful investigations on occupational hygiene. In 1907, the late Dr. Charles Harrington submitted a report to the Massachusetts legislature which dealt in a systematic manner with the effects upon the health of operatives in the various industries of Massachusetts. In the same year, a law was enacted whereby the state was divided into 15 health districts and a physician was appointed in each district as State Inspector of Health.

Massachusetts was thus the first state in the Union to recognize that sanitary inspection of factories is essentially a health matter, and should be under the charge of the central authority of the state. During the five years of their work the State Inspectors of Health have carried on extensive investigations in which special attention was given to the health of young persons employed in industrial establishments. As a result, a law was enacted in Massachusetts whereby minors are excluded from trades and processes designated by the state board of health as injurious to health.

What is Needed

To protect the workers from the ill effects upon their health from industrial processes or unsanitary conditions the following measures should be adopted:—

(1) To collect complete and accurate data about industrial processes and about conditions under which the various industries are carried on.

(2) To obtain more accurate and detailed information relative to occupation on morbidity and mortality records.

(3) To instruct the medical student in this important field of preventive medicine by a course of lectures on the more important

industrial processes and the diseases to which they give rise.

(4) To place the specific industrial diseases on the list of diseases notifiable to the central health authority.

(5) To examine periodically all workers in certain industries, these industries to be named by the central health authority.

(6) To exclude minors and women from certain industries which are designated by the central health authority as injurious to health.

(7) To have adequate laws regulating sanitary conditions and protective devices in industrial establishments and to have such laws intelligently enforced.

(8) To have the central health authority issue regulations for certain dangerous trades with instructions to employers and employees how to guard themselves against the ill effects of their work, and to have such instructions posted in the workrooms.

(9) To carry on an extensive educational campaign both among employer and employees as to the value of protective measures and good sanitary conditions.

Town Planning Act

New Brunswick Enacts Important New Legislation

The Town Planning Act passed by the legislature of New Brunswick this year, places wise restrictions on various phases of city and town development. A brief summary of the principal clauses is given herewith:

Any town or city council may prepare a town planning scheme, but before it is acted upon, it must be approved by the Government. Thus, all future developments in the towns and cities of the province are carried out under Government supervision; and ample provision has to be made for suitable traffic highways, proper sanitary conditions, open spaces for parks and playgrounds, the number and nature of buildings per acre, etc.

Local commissioners, appointed subject to Government approval, shall be the responsible authorities for supervising the development of new town areas. These commissioners are given important powers in order to compel conformity to the law, but private rights, when injured, must receive compensation.

It is perhaps unfortunate, that city governments require such paternalistic regulations on the part of the provincial authorities. Past experience has made it plain, however, that such regulations are, in the case of most cities, absolutely essential if cities and towns are to be developed along sane and healthful lines. It would be to the advantage of the other provinces to follow the lead of New Brunswick in this important matter.