## Henri Bourassa on Single Cropping

**Folly of this method pointed out—comments on farming in the West**

"In the neighbourhood of Regina people have proudly pointed out to me fields sown with wheat for twenty years running. Truly, the deep soil of Manitoba and Saskatchewan are marvellously fertile; but the richest land in the world cannot stand this treatment. Those interested in farming affairs, who have watched the gradual decline in the production, first of wheat, then of pease, then of hay, in the St. Lawrence basin and the Richelieu valley, know the inevitable result of such abusive tillage.

"The slow exhaustion of the soil is not the only consequence of this method, or rather of this want of method. If we examine the returns in good, bad, and middling years, we can estimate that, on an average, every western farmer loses one crop in three.* For the man who cultivates only cereals, this represents a loss of revenue of about 30 per cent. If the loss comes all in one year and he has no reserve from the year before, he is ruined.

. . . .

"On the whole, the climate of these prairie provinces is more agreeable and more healthy than ours in Quebec. There are not, for farming, more middling and bad years than here. But because of the conditions that I have noted, when a bad year does come, the wheat-grower finds himself in the situation in which the habitant of Quebec would be who sowed only potatoes in a rainy year, or who counted entirely on the hay-crop after a spring of hard frosts, followed by a summer of severe drought; he would scarcely ever recover."—*From "Le Devoir,"* 15 *July*, 1913.

*It would be interesting to know precisely by what process of calculation Mr. Bourassa arrives at this conclusion.—*Ed.*

### *THE FRIGORIE*

The development of refrigerating industries has been so vast and so rapid of late years that it has been found necessary to define new units of measurement and terms of appellation. The most essential of these is the *frigorie*. This is the exact opposite of the heat unit, the *calorie*, which represents the amount of heat required to raise 1 kilogramme of water through 1 degree centigrade, except at the boiling and freezing points. The *frigorie* is the amount of cold required to lower 1 kilogramme of water through 1 degree centigrade. It requires 80 calories to raise 1 kilogramme of water from 0 degrees to 1 degree centigrade, and a kilogramme of ice at 0° centigrade will, therefore, furnish 80 frigories in melting, or, in other words, it will abstract 80 calories from the atmosphere.—W.L.C.

## Health, Hygiene, and the High Cost of Living

### Application of Teachings of Preventive Medicine an Important Factor in Increasing the Efficiency of Industrial Populations

The subject of the cost of living has been considered from many different points of view, and, with regard to the industrial class of the population, it may be said that the term expresses the relation between the cost of food, shelter and clothing, and the wages received. It follows, that anything which increases the efficiency of the people as a whole or the personal efficiency of the individual, tends to lower the ratio of expense to income, and hence affects the cost of living.

The prevention of disease, therefore, is necessarily a factor of the utmost importance in connection with the cost of living. Testimony of a reliable nature can be adduced to show that 42.3 per cent. of the deaths each year might be postponed, that 50 per cent. of the cases of serious illness might be prevented, and that 12.3 years might be added to the length of the average human life. If, therefore, the present waste of health were conserved, innumerable invalids would become wage earners; instead of being a burden upon others, they would be self-supporting, and, as a result, the average income would be increased. Continued ill-health of even a trivial nature undoubtedly decreases the efficency and consequently the earning power of the individual. Preventive medicine has already done much and can still do far more in this respect. The physicians can point the way, education can fit society to cope with the diseases and a unison of the two will result in a further conservation of health.

Preventable accidents, preventable illness and preventable deaths are great unnecessary wastes of human efficiency. In regard to the first of these, workmen's compensation laws and humanitarian principles are already inducing the manufacturer to equip his plant with safety devices. Furthermore, defective hearing, defective eyesight and fatigue are, in addition to ignorance, three great factors in promoting industrial accidents, and factors which can be easily dealt with. The greater number of accidents occur at a time of the day when fatigue is most commonly experienced by the workers. By proper measures the evil results of fatigue can be almost entirely done away with.

With regard to preventable illness the matter of occupational diseases is of primary importance. Certain forms of disease are closely associated with certain trades, and preventive medicine has pointed out measures by which the dangers in connection with these trades may be obviated. General diseases can also be prevented. It is only necessary to mention that dread foe of the industrial classes, tuberculosis, to illustrate the value of prevention. There are also many other forms of disease which can be dealt with to advantage.

The first and most striking instance of preventable deaths is found in the figures of infant mortality. That this mortality can be largely reduced is an admitted fact. A better milk supply will undoubtedly help, but intelligent motherhood, a result of education, will do more to reduce the infant death rate than anything else. Observation and experience show that children who are breast-fed by their own mothers have a far better chance of living than those fed on cow's milk or artificial food.

Conservation of health is perfectly feasible and would have a marked effect upon the efficiency of the population. Prevention of disease would mean increased per capita wage earnings, and hence, a reduction of that ratio known as the cost of living. Preventive medicine assures greater power, greater health and increased wage-earning abilty to the individual who follows its teachings, and, at the same time, increases his moral, mental and physical efficiency.—W.L.C.

## THE MINER'S INCH

On the Pacific coast, the unit for measuring water in mining is known as the miner's inch. This varies greatly in different localities and is now generally defined by legislative enactment. The statute inch of Colorado, for example, is defined as "an inch square orifice, which shall be under a five-inch pressure measured from the top of the orifice to the surface of the water, in a box set in the banks of the ditch. This orifice shall in all cases be six inches perpendicular inside measurement, and all slides closing the same shall move horizontally, while from the water in the ditch the box shall have a descent greater than one eighth of an inch to the foot."

**In British Columbia**

In British Columbia, under the Water Clauses Consolidation Act, 1897, Section 143, a miner's inch is declared to be a flow of water equal to 1.68 cubic feet per minute. Therefore, a miner's inch is equal to .028 cubic feet per second, and 1 cubic foot per second is equal to 35.71 miner's inches, approximately. One cubic foot per second would be equal to 38.4 Colorado miner's inches.—A.V.W.

## Forest Growth in British Columbia

**Nature's reproductive processes need no artificial stimulation by forest planting**

It is estimated that British Columbia contains over one hundred million acres of wood land, of which upwards of sixty-five million acres may be regarded as actually or potentially capable of producing merchantable timber, though, outside of this, the land is not of value. On this area Nature has been busy for a great many years storing up what is today one of the greatest of the few extensive reserves of commercial timber left in the world. It is estimated that this area contains over three hundred billion feet board measure of timber, comprising over half the standing timber of Canada. When the question of forest planting is linked with such a resource, it becomes of interest, even though the importance of planting to the perpetuity of the resource yet remains to be seen.

The matter of reforestation has been considered in connection with British Columbia from three points of view:—

1—Silvicultural.
2—Financial.
3—Economic.

Owing to a very favourable combination of soil and climate, nowhere, at least in the temperate zone, do trees grow more rapidly and persistently than on the Pacific slope of North America; nowhere is natural reproduction more prolific and vigorous. In fact, this very readiness of Nature to undertake the work renders discussion almost superfluous.

However, it has been demonstrated that reforestation is practicable in British Columbia. Not only would it be possible to reproduce those trees which are indigenous to the soil, but also other exotic trees such as the hardwoods. But, in a province which is cutting as yet only one-fifth of the annual growth of its forests, it is naturally hardly necessary for man to undertake to facilitate the reproductive processes of Nature.

It may be concluded, then, that artificial reforestation is neither necessary nor, relatively speaking, desirable, over the major part of British Columbia today. With regard to the three considerations mentioned above in this article the following conclusions have been arrived at:—

*First*, forest planting in British Columbia is silviculturally possible. Hardwoods may be grown as well as softwoods;

*Second*, forest regeneration in British Columbia is financially practicable, as also is forest planting;

*Third*, forest planting is not now, in general, necessary, nor is it the most profitable way to spend time, energy, or money in British Columbia.—W. L. C.