Results of Forest Fires

Destruction of Forest Cover the Cause of Large Decrease in Water Supply

Residents of Wallace, Idaho, now claim that results of the disastrous forest fires in northern Idaho in 1910 are being made evident in the changed flow from a watershed then burned over, which furnishes the water supply of the town. This basin included an area of approximately two thousand acres and was formerly well timbered with trees from 50 to 200 years old. These were almost wholly destroyed by the fires of 1910. From this watershed the town gets its supply not only for domestic purposes, but also for the development of electricity for power and light, so that the maintenance of a considerable flow is essential to the city.

It is stated that before the fires the flow of the stream at its lowest stages was never below one thousand miners' inches, the unit of measurement which has been used. But since the fire, the records show that the minimum flow has fallen to about 250 miners' inches and it is now necessary for the company which furnishes water, light and power to expend a considerable amount of money each year in developing power from steam and to use a considerable part of this power in pumping water. Records of the weather bureau at Wallace show that the precipitation for the years since the fire has been about normal for the region. This seems to demonstrate to the townspeople that the variation in the flow must be due to the destruction of the forest cover of the watershed and not to any change in climate or precipitation.

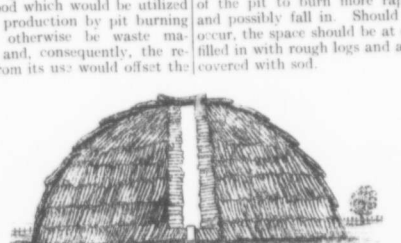
In view of the situation, the forest service has undertaken to reforest the denuded watershed. Some planting has already been done and eventually all of the watershed which is included within national forest boundaries is to be reforested. The people of Wallace are taking considerable interest in the work and express themselves as thoroughly in sympathy with the effort that the service is making. The experts of the department, however, point out that while the planting will probably have no immediate effect, yet it should influence run-off as soon as forest conditions are restored, and re-establish eventually a more stable stream-flow. In the mean time the forest officers are taking measurements of the stream in connection with the records of precipitation, to determine just what relation exists, and what results will follow reforestation.

"Made-in-Canada" means development of Canada's natural resources and employment of Canada's workingmen.

Charcoal Burning

Wood Now Destroyed Might be Profitably Converted into Charcoal

In land clearing work, use may be made of the wood taken therefrom for the production of charcoal. Canada has a constantly growing market for charcoal, and with good prices for the supply, it is advisable to increase the production. While the retort is, undoubtedly, the more economical means of producing charcoal, the advantage is offset by the fact that the wood which would be utilized in the production by pit burning would otherwise be waste material, and, consequently, the return from its use would offset the additional cost of production by the latter method.



Cut No. 82 Section through a Charcoal Pit, showing method of building and covering.

For charcoal burning, it is essential to have a piece of land sheltered as much as possible from the wind. All kinds of hardwood not under two inches in diameter may be used. The wood should be sawn into two-foot lengths, and split, if required, into pieces not over four inches square. Sufficient wood should be provided for two pits; it is advisable to burn two pits at once, as during the charring process two pits can be attended to as readily as one, night and day attention being required.

Charcoal "pits"—an illustration of which is shown herewith—are usually built about twenty-one feet in diameter and about nine feet high. To commence the pile, a strong stake is driven into the ground, having about one foot exposed. Around this stake are placed upright small pieces of dry wood of equal length, and this is continued until a layer of wood is formed the size of the pit. A circle about one foot in diameter is built around the stake driven into the ground by placing the pieces of wood horizontally on the upright pieces, the end coming to the centre circle. This circle is thus built up to the required height, forming a chimney for the pit, by which it is fired. Outside this circular core the wood is piled on end and reclining inwards, layer upon layer, until the pit is of the size required. When the building is completed it is covered with newly-cut sod, the grassy side inwards, commencing at the base and working upwards, the sod overlapping a few inches, and the chimney being left open. Before covering the top part of the pit, all crevices between the wood should be packed with sod or sawdust to exclude the air. The pit is fired by dropping hot coals and small pieces of dry wood into the opening at the top; the opening is then covered with sod, which effectually closes in the pit, and the charring commences.

Constant attention is required day and night during the burning, especially during stormy weather, as the wind, by striking a particular part of the pit, causes that part of the pit to burn more rapidly and possibly fall in. Should this occur, the space should be at once filled in with rough logs and again covered with sod.

The time required for burning varies from seven to nine days, according to weather conditions, dry and mild weather requiring the longer period.

As the charring proceeds, the sod covering gradually disappears until only a slight covering of burnt earth remains. When the pits have burned out and become cool their size will be reduced to somewhat less than half of the original. The charcoal may be extracted by means of a fine-toothed rake, after which it should be stored in a dry place, care being taken to see that no live embers are left.

There are a great many uses for charcoal, among them being that of an insulating medium in cold storage plants and as a disinfectant, charcoal having the property of absorbing gases, as well as being a preservative of food and animal substances.—*D.*

Implements and Their Care

Winter is for most farmers a season in which there is comparatively little outdoor work. There is, however, always work of some kind for the energetic man on the farm. The care and protection of his investment in implements should be one of his important duties. By this care, not only can he prolong their usefulness, but he can save considerable time.

It is of paramount importance that implements and tools, when required for use, be in condition for satisfactory service. Especially at harvest time, it may be a matter of hours to get the crop secured, and it is then that the results of care and inspection are apparent.

Machinery consists of fixed and moving parts, and it is necessary for their successful operation that they remain in this condition. Use, however, causes vibration, which tends to loosen and wear bolts and other parts of machines. An inspection will discover where these are and nuts may be tightened and worn parts renewed; these, if neglected till the machines are required, may cause the loss of valuable days through the loss of bolts or nuts, or while new parts are secured. All moving metal parts should be covered with vaseline or other grease to protect from rust and consequent increased friction in operation.

It is a good plan to have on hand an assortment of bolts, nuts, screws and cotter-pins, as well as wrenches, especially socket wrenches and extensions. A surprising number of bolts and nuts are put in the most difficult place to get at, and, if proper wrenches are not available, many delay result.—*D.*

Forestry on a Business Basis

Actual Results Obtained from Scientific Operation

The best example of a municipal forest developed specially along commercial lines is the Sihlwald, the city forest of Zurich, Switzerland. This is an extensive tract of 2,560 acres on the high mountains near the city. It has been under some form of systematic forest management since 1250, over 600 years ago.

Thinnings are made when the trees are only 15 years old and repeated at intervals of from 5 to 10 years. The products of the thinnings, even down to the smallest twigs, are marketed at a profit. The total yield from thinnings alone is about 10 cubic feet per acre per annum, which is a splendid showing of the results of practical forestry. The annual growth on the whole forest is about 200 board feet per acre annually. Under natural conditions, it would not be over 100 board feet.

The utilization of the products of the Sihlwald is especially interesting. Instead of selling the timber as it stands, as is the common practice in this country, the city does all the work itself, giving year-round employment to about 110 men. The trees cut from the forest are not only worked up in the form of lumber and fuel, but the city actually makes such small articles as tool handles, wood turnery, excelsior, wooden implements, etc. The tops are bound up for faggots, and everything, even the stumps, and often the very leaves on the ground is used.