

of their timber? The quantity of rain and snow fall may or may not be greatly influenced by extensive forests. This is thought to be an open question yet to be accurately determined by further investigation. But it is well known that trees singly and in masses do check evaporation, and thus hold the ice and snow under their shelter for a longer time; that they form underneath their foliage a peculiar absorbent mat or humus mold, a soil bed that is porous and well adapted to feed gradually the flow of springs; that they lessen in a great measure the deep freezing of the ground surface and thus give a longer time or percolation and the subterranean drainage that feed the springs and rivulets that supply our mountain streams; that they break the descending force of rains and thus prevent the impacting of the surface soil and so further maintain its absorbent condition and prevent excessive surface drainage; and that they diminish the effect of dry and evaporating winds. These facts deserve more than a passing notice by the citizens of our Territory. All that we have and all that we hope to be, in a material way, have their basis in an abundant water supply. To neglect whatever pertains to its maintenance and increase is to paralyze our industries and cut off hope in our future prosperity.

IRRIGATION.

In modern times before the Mormon settlement of Utah, the term irrigation had scarcely a specific meaning. We remember in our early school history a crude picture of some men raising water from the river Nile in Egypt by means of a series of buckets hung to what appeared like old-fashioned well-sweeps. It was explained that Egypt had no rainfall and these men were getting water in this way to irrigate their crops. We also have a vague remembrance of reading something about irrigation in certain countries in Asia. In America, however, the term has gained a strong and peculiar significance though the experiment it indicates is a new one or the revival of a prehistoric one. In the few years since its first trial, it has developed into one of the grandest schemes ever discovered or devised for reclaiming arid and so called desert lands from their seemingly ultimate and hopeless poverty. Vast areas of land in our country before considered sterile and worthless, are by this means of the artificial application of water, fast being converted into fruitful fields. There must, however, be a source of water supply to meet the purpose. Our lofty mountains, with their profound canyons filled with masses of ice and snow and sheltered by forests of timber, have been the prevailing source of this supply. Systematic irrigation which we are rapidly developing by close observation and careful experimentation, promises in time to extend greatly the area of our cultivated lands. The opening of new sources of water supply by adapting streams heretofore unused, by the storage in safe reservoirs the winter and spring waste; and by judicious economy in the distribution of the water used, will eventually render the greater part of our valley lands available to culture. It is also being demonstrated as the result of this artificial application of water to growing crops that not only is the yield in general greater, but that superior and more exquisite qualities of farm and garden products can be de-

veloped, a result possible only where the exact amount of moisture needed and the time required for its application can be precisely adjusted, which is never the case where chance rainfall is to be depended upon. This fact has been so well exemplified in the experience of our Territory that there is scarcely a doubt that in the near future artificial irrigation combined with some adequate system of drainage will be employed even in regions of abundant rainfall. But what will become of this hopeful outlook if we persist in destroying the only foundation on which it rests, the sources of our water supply? Any policy that will lead us to neglect our water resources is scarcely less than suicidal. If we have not gone too far already in injudicious exploitation of the timber about these sources, we should now take steps to preserve what is left and recover if possible what our necessities in the past may have forced us to destroy. One object of our Forestry Association is to look into this matter and endeavor to apply such remedies as may be needed. We realize, however, in this scheme and others the society proposes to undertake, the difficulty there may be in getting men to consider seriously, interest themselves in, and act promptly on what does not give a prospect of some immediate returns, something that may at any time be turned into ready cash. They forget, perhaps, that the basis of our prosperity today is, in a great measure, the inheritance of our forefathers, a testimony of the unselfish interest they had in the welfare of their children. The egotism of the saying, "after us the deluge," is unpatriotic and unworthy a true citizen of the world. But the facts we have stated are indeed, of immediate concern to us, as they affect all the industries of this mountain region today, as they will those of the future. Successful irrigation is the very life of this region, the basis of all its profitable enterprises. We must look after its continuous success and increase, if we would secure prosperity to ourselves and our posterity.

TREE CULTURE.

If the statistics at hand are correct, Utah has less forest area than any other state or territory in the Rocky Mountain region. Six thousand square miles are reported which is less than one half that possessed by either Wyoming or New Mexico, the two rated lowest next to Utah. The fact, however, is too apparent without statistics that native timber is not a plentiful article in Utah. It is, therefore, an important question for us to consider whether tree culture with us does not deserve more attention than it receives. In fact the subject seems to deserve attention if only to direct right the effort made at present in that direction. Some of our people appreciate the importance of this matter of tree culture and are doing what they can to a limited extent but in a practical way to assist the work. But their efforts as a rule are misguided. They lack knowledge of the proper course to pursue in order to get the best and most profitable results. They still plant cottonwood, gileads, and popars instead of better and more profitable species, and make mistakes in other ways which a little knowledge from the experience of others would enable them to avoid. All praise to the cottonwood! It deserves an apostrophe or an encomium from our best western poet or writer. 'Twas a

friend in need and indeed to the early adventurer and pioneer in this arid land of the West, whom it shaded and sheltered and provided comforts and needs that without it could not have been found. But in this good work it has fulfilled its most important purpose, and as new conditions require new agencies, it should be replaced by species at present more useful.

The subject of tree culture must be studied and systematized to be of great value, and as our Territory as much as or even more than any other, stands in need of the benefits it may procure, the Forestry Association has engaged itself in an effort to interest the people in its promotion. Besides promiscuous tree planting for shade and other purely local benefits, there is the greater question of area planting, forest culture in fact, which needs agitation to determine its possibilities and expediency. Can we secure sufficient interest in the people for its serious consideration and a united effort on their part for its accomplishment? At present the association has no dictum to set forth on any of these questions involved in the subject of forestry. It will have accomplished its present purpose if it succeeds in arousing an active interest among the people that will lead to thought and discussion and final concerted action on these topics, as may be thought best, and proposes only to be an organization through which such work can be done systematically, economically and successfully. It is no abrupt revolutionary scheme or mere speculation, but a society of citizens interested in questions concerning their own welfare and that of their children. Its membership, therefore, is open to all citizens who will take an interest in the subject and use their influence and knowledge for its promotion. Its constitution provides for county branch societies which it is expected will be organized in the different parts of the Territory as integral elements in the general organization. Its work of improvement will be largely carried on through the local societies by meetings, questions, reports, discussions, etc.

WORK OF THE ASSOCIATION.

The following epitome may give some idea of the preliminary work of the association in immediate contemplation:

- 1 To gather knowledge of every kind and from every source relating to forestry and tree culture, and to preserve the same in the form of a bureau of information on the subject
- 2 To distribute this knowledge wherever needed throughout Utah.
- 3 To investigate and learn the real extent and condition of the native forests of Utah.
- 4 The extent and causes of their spoliation
- 5 The effect of such spoliation on the amount and distribution of waterflow.
- 6 The favorable or unfavorable chances of renewing forest growth on lands denuded from any cause.
- 7 The effect of pasturing sheep and cattle about the headwaters of irrigating streams
- 8 The propriety of securing from the general government forest reservations about the headwaters of the principal streams in Utah
- 9 The extent of tree culture in Utah and the kinds of trees planted.
10. The possibility of cultivating suc-