

THE RECLAMATION OF SALINE AND ALKALINE SOILS.

It will be remembered by our readers that, some months since, there was printed in the News, a request, made by the British government through its minister at Washington, for information as to the method adopted in this Territory for the reclamation of saline and alkaline lands, and rendering them valuable for agricultural and other purposes, the object being to test, under the auspices of the British government, the methods adopted by the farmers of Utah, in the reclamation of lands of a similar character in British India.

The request was forwarded through Hon. W. H. Hooper, to Hon. Wilford Woodruff, of this city, President of the Deseret Agricultural and Manufacturing Society. The Society appointed a committee to attend to the matter, and through them the following information has been collected and forwarded to the British Minister at Washington:

SALT LAKE CITY, Jan. 20, 1872.

To the Pres't and Directors of the D. A. and M. Society:

Gentlemen:—We, the committee appointed by your honorable board to examine and revise the correspondence concerning the treatment and reclamation of salt and alkali lands in Utah, designed for the benefit of Her Majesty's Government in India, take pleasure in submitting the following interesting letters upon the subject; suggesting that they be published in this Territory at some suitable time, for the benefit of our farmers in general.

We have the honor to be,

Yours respectfully,

A. P. ROCKWOOD,
R. L. CAMPBELL,
F. A. MITCHELL.

SAINT GEORGE, Washington Co.,
Utah, Dec. 11th, 1871.

Hon. Wilford Woodruff, President of the Deseret Agricultural and Manufacturing Society.

Sir:—In answer to your letter concerning the reclamation of saline and alkaline lands, I will say that after nearly twenty years' experience in this Territory, in cultivating more or less mineral lands, I find no better way to make them productive than to leach them, and to do this most effectually, they should be levelled so that the water will stand on them. This can be most cheaply done by ploughing, throwing the furrow continually down hill, forming terraces.

If when water is near the surface, land cannot be effectually and permanently leached without deep draining, as in some parts of St. George City site, the water will recede in summer and rise in winter, bringing the mineral with it. A few inches of sand spread on the newly leached land, will greatly facilitate the starting of seeds and plants, preventing incrustation and breaking contact with the soil while the plant is yet tender.

I find that castor beans, cotton, summer squash, melons, onions and lucerne, will grow where there is a considerable portion of mineral; they are the vegetation I would recommend to plant on newly leached lands. Castor beans first, and soon in the order I have placed them.

Respectfully,

JOHN OAKLEY.

SAINT GEORGE, Dec. 12th, 1871.

Hon. Wilford Woodruff, President D. A. and M. Society:

Dear Sir:—In 1850, I bought lands near the Great Salt Lake, which proved to be strongly impregnated with salts and alkali, but by liberal irrigation and a heavy covering of chaff, the land so treated became very productive.

My lots in Salt Lake City were so charged with mineral that vegetation was blighted and destroyed, but by draining, manuring and thorough ploughing and hoeing, they were reclaimed without irrigation. Water was within three feet of the surface of the ground.

In 1861 I removed to St. George, where our city lots were so full of mineral that I have known sandstone to be decomposed by it. We subdue this mineral by terracing our lots about two rods wide, and leveling our land so that the water will stand all over it. After it had stood so a short time, the mineral would dissolve, become frothy

and swim on the surface, which being drawn off and repeated a few times thoroughly reclaimed the land. Then apply manure.

Respectfully,

WILLIAM FAWCETT.

UTAH COUNTY, Dec. 7th, 1871.

Hon. W. Woodruff, Pres't. Deseret Agricultural and Manufacturing Society:

Dear Sir:—The best practical method of reclaiming mineral land with which I am acquainted is to plough the land, the way the water runs is the best. Make the main ditches not more than ten rods apart for land that is of a sandy loam; for clayey soils farther apart. After the ground is harrowed and leveled, throw up back furrows about two rods apart, to keep the water from spreading; then turn on a large stream from the main ditches, if the land is level, a smaller stream if the land is not level. This process will dissolve and wash off the mineral.

Fall ploughing is an advantage to land; but it is better to plough just before sowing on mineral lands, as the mineral rises to the surface, and ploughing turns it under again, and gives the grain or vegetables a chance to grow some size before the mineral forms a crust. By irrigating, when you discover the mineral so forming, even when the ground appears moist, it will save your crop.

I prefer sowing in drills, as it gives better facilities for working the ground and keeping down the mineral.

The best way for the British government to make irrigation and the reclamation of lands in India a success, would be to engage some skillful labor from Utah.

Respectfully,

BENJ. F. STEWART.

SALT LAKE CITY, Jan. 1872.

Hon. Wilford Woodruff, Pres't. D. A. and M. Society.

Dear Sir:—My theory for reclaiming saline and alkaline lands, the result of 24 years' experience, is as follows:

Saline lands are too rich, or fat with the very best fertilizers of the earth, and the question is, Can these lands be weakened or reduced in strength so far as to be brought under successful cultivation? Take for example ten acres of land that is so strong with salt that nothing can grow. Ditch around it, say three feet deep, and cut ditches through it, then cut a ditch leading off from the ditches that surround it; plow the land and flood it, and when the water has stood upon it long enough to melt the particles of salt, run it off; and so continue from time to time, and the land will become sufficiently fresh to vegetate seed and produce crops.

Sufficient water to wet the ground, without running off, will never reclaim it. If there is not water sufficient to flood it, plow often, leaving it rough, and plow in such a way, that when it rains the water may run off into the ditches.

By frequent plowing the soil comes in contact with the gases of the atmosphere, and thereby undergoes a change, and is reduced in strength, and will after a time become productive, as I have proved by actual experiment.

Fresh fine sand is excellent to spread on and mix with the soil, it both warms and weakens the saline lands. Barnyard manure has much salt in it, therefore it is not good for strong salt lands.

Fruit trees can be raised upon these lands by adopting the following rule: When your trees are planted, bring sweet fresh soil and put around the roots, well mingling therewith, and especially around the stock where it comes out of the ground, for if the tree be injured in any way by the salt, it will be the bark at the surface of the ground.

Pear trees will stand almost any amount of salt and grow well. When fruit trees get once rooted in salt land, they become healthy and yield the best of fruits. There are many grades of saline lands, but the same rule will apply to all.

Respectfully, G. B. WALLACE.

FARMINGTON, Davis Co.,

January 11th, 1872.

Hon. Wilford Woodruff, Pres't. D. A. and M. Society.

Dear Sir—I have the honor to acknowledge the receipt of your letter, requesting information concerning the reclaiming of salt lands, and in reply have to state that the efforts of many farmers who own lands bordering immediately on the shores of the Great Salt Lake, have been very successful in almost every instance by flooding with

fresh water during the spring and winter months, thereby washing the land, and leaving a deposit of sand and mud, washed down from the land through which the stream passes.

Some of the farmers are now cutting from two to three tons of fine hay per acre, and from 50 to 75 bushels of small grain are raised per acre, on land reclaimed by this treatment.

Some of our farmers have been successful by hauling sand and mixing with the soil. These are the only modes of treatment of which I have heard in this county that have proved successful.

Respectfully,

ARTHUR STAYNER.

Secretary of the Davis Co. Branch of the D. A. and M. Society.

SALT LAKE CITY, Utah,

January 16th, 1872.

Hon. Wilford Woodruff, Pres't. D. A. and M. Society.

Dear Sir—I have experimented on and brought into successful cultivation, in the following manner, some land so strongly impregnated with mineral that nothing grew upon it, and so situated that water could not be advantageously applied to wash the mineral out.

Put on a good coat of warm manure, and plow very deep in the fall of the year; and in the spring, before sowing, plough again, but not quite so deep as in the fall. The seed should be sown immediately after ploughing.

For all kinds of roots, furrow out with a small plough or cultivator, leaving sufficient room between the furrows to plough and cultivate the soil. Sow the seed in the drills; haul on and cover with fine sandy loam. Do not irrigate till the plants are a good size, and the weather hot.

In this way I have raised beets weighing from 10 to 18 pounds each, on land where nothing grew before.

A few inches of sand, a coating of chaff, or fine manure over the whole surface, after planting, prevents crusting, becomes mixed with and improves the soil for future crops.

The following kinds of fruit can be successfully raised on such land, viz.: apples, pears, plums, currants and gooseberries.

Plough the ground deep, and for all kinds of trees dig the holes two and a half feet square by two feet deep, put in the bottom of the hole six inches of good manure, then six inches of mixed sand and gravel. Set the roots of the tree in good loam not too far below the surface. A tree thus planted will grow thriftily.

I have an orchard planted as above, bearing good fruit four years after planting. The mineral does not appear to injure the tree after it gets well started. And as its size and shade increase, so the soil surrounding it improves.

A good coating of rough manure, chaff or partially rotted straw, over the whole surface the first year will keep the ground moist and prevent crusting.

Where water is plentiful and the land so situated that it can be applied, the saline substances can easily be washed out by having the necessary drainage, and the land be made productive either for grass, roots or grain.

Respectfully, JOHN R. WINDER.

SPANISH FORK CITY, Utah,

Jan. 8th, 1872.

Hon. Wilford Woodruff.

Dear Sir:—Permit me to communicate a few items of information concerning saline lands in this section of country. In 1852, a tract of land in this neighborhood was enclosed and used for farming purposes, which, after a trial of two years, proved to be so full of saline matter that it was abandoned and turned to common. The same land has since been enclosed as a pasture, and is at this time of great value either for pasturage or for agriculture. Its reclamation from alkali is mostly due to the increased rain of late years, and partly to the mixing of the grass with the earth through the tramping of cattle, and its becoming thereby decomposed.

Respectfully,

A. K. THURBER.

LOCAL AND OTHER MATTERS.

FROM TUESDAY'S DAILY, SEP. 17.

THE PRIZE TURNIP.—Mr. William Howard, of Randolph, Rich county, writing on the 12th inst., says:

"I have just pulled a turnip out of my garden, measuring 32½ inches in circumference, and weighing ten pounds. If any one can beat this, I give up for this year."

AGRICULTURAL.—In another part of this paper will be found communications of much interest upon the matter of reclaiming alkali lands. All our farmers and others interested in the cultivation of the soil will do well to read the article. It will be worth more, to them, than acres of political sensationalism.

SEVERE ACCIDENT.—On the 6th instant, Father Richard Atkin, of Tooele City, met with a serious mishap. While removing the scaffolding from the new "co-op." shoe store, a plank fell from the building, and striking him on the head, rendered him partially unconscious for several days. The injury was severe, but we are gratified to learn that Brother Atkin is slowly progressing towards convalescence.

UNDIGNIFIED.—Two of the most prominent Federal officials can be seen almost daily at one of the principal hotels of this city, making it a business to buttonhole nearly every respectable stranger who may chance to put up at the house. We learn from a most reliable source that the object of the buttonholing operation is to poison the minds of visitors and those who may come here with the intention of staying permanently with regard to the "Mormons" and "Mormonism." Now such conduct is small potatoes, and even aside from the respectability and dignity that should surround the character and doings of a representative of a great government, no gentleman with a proper degree of self respect would condescend to indulge in such petty business. In fact we did not imagine until lately that it was done at all, seeing that the very chief of buttonholers has been out of town for some little time. Those two prominent individuals should remember that they cannot fail to meet frequently with persons who do decidedly object to be bored, and who are not inspired with the amount of zeal they possess for the downfall of "Mormonism," but who come here either to attend to some legitimate business or see what is to be seen, and we therefore advise the said officials, especially the tallest of the two, who is by far the most efficient and indefatigable button-holer, to show a little discrimination in the matter, for they certainly would not feel flattered by the expressions of some of their victims—the button-holed. Button-holing is a poor business, and is a sure sign of the carpet bagger.

CATTLE STEALING.—Some days ago a resident of Brighton Ward, named Alexander, lost four head of cattle from the range, the hides of which he subsequently found at a slaughterhouse near that place, owned by a person named Smith, who runs a butcher's shop in this city in violation of the city ordinances. From information given to the police, officer John Y. Smith, on Saturday last, arrested a person named Cook, at his residence in the 5th Ward in this City, on suspicion of being the party who drove the missing cattle to the slaughterplace where their hides were found. The examination of Cook was set for yesterday afternoon, but it was postponed until to-day.

This morning, on being brought before Alderman Clinton, Cook made a statement to the following effect:

He did not drive the cattle for himself, but could prove that he drove them for Smith, who, when he wanted cattle gave him, Cook, the description, including brands &c., and he drove them for him, from the range to the corral or slaughterhouse. There was nobody there to receive them, but his instructions were to drive them to and leave them there. He had six dollars a day from Smith for attending to this business, which he had hard work to get. He could not tell exactly how much Smith had paid him on this account. He commenced it last fall; had made about six drives, this summer; had heard that another man had been employed by Smith while he was sick. Most of the cattle he had driven were branded "P. K." He drove four head the last two drives; had not received his pay for it. There was a man at the corral the last time he went, who helped him to corral them; he did not know who he was. The man did not ask any questions. Smith told him, Cook, that he, Smith, had cattle, and gave him the descriptions.

The case was adjourned until Thursday to enable the prisoner to procure the aid of counsel. He had endeavored to obtain the services of Mr. Bates, Territorial U. S. Attorney, but that gentleman declined to have anything to do with the case.

Here is another splendid chance for legal juggling and judicial sleight of hand, for, as we have already said, the man who, according to Cook's statement, is his employer, and who, if that statement be not disproved, will certainly be seriously implicated, is one of the precious set of harpies now infesting this city, who defy the city authorities and their ordinances.

It is no wonder they are successful when, besides receiving encouragement and support from legal pettifoggers and corrupt officials, they also resort to wholesale plunder. If the disclosures of this tool, Cook, lead to the arrest of the guilty, we expect to see some squirming, and twisting of the law on the part of a certain class to rescue their protegee from the punishment due to his malpractices. But it is a bad cause that can not be temporarily sustained without robbery and lawlessness.