cases are recorded where as high as 2, 3, and even 4 grains have been absorbed for a number of days in succession without any ill effects whatever. Some recent French investigations have shown that a dog can absorb from 15 to 25 grains of copper sulphate without injury. Sheep have been fed on 43 grains per day for several days in succession without any noticeable derangement of the system. Now I have tried to show you that there is no fear in spraying with compounds diluted with copper sulphate. If any of my readers would like more definite explanation, please let me know and I will answer willingly any inquiry in regard to same. THOS. E. VISSING,

Asst. secy., Utah state board of horticulture.

ALL DID NOT GO.

Governor West Wednesday afternoon received the following letter from Indian Interpreter C. L. Christensen, showing the status of the Ute invasion difficulty at this date:

VERDURE, San Juan County,
December 28, 1894.

To His Excellency, Caleb W. West, Governor of Utah, and Colonel Tatlock:

Gentlemen:—I thought I would let you know that your mission of peace to this part of Utah was not entirely in vain. A goodly number of the Ute Indians have left here, but not all that ought to have gone. On the 26th ult., twenty tepees passed through this place, taking up their winter quarters on the Montezuma, about twelve to thirty-five miles northeast of Bluff. These twenty tepees represent nearly one hundred Indians. A number pulled for La Salle mountains with an old Pine river Ute named Rooster; I do not know the number. Bi-now, an old hardshell kind of a chief, owning nearly five hundred head of horses, moved northwest to the Blue mountains. He has generally nearly thirty souls with him. P. R. Butt, brother of Sheriff Butt, just from Day valley, says there is quite a number in there for the winter and say they are going to stay. Some few have gone to Bluff and quite a number have gone way west, bordering on the big Colorado river. There is this difference in favor of the settlers: in their scattered condition they do not form so formidable an appearance for fighting and the people are not in so much danger as when they moved in a body where they pleased. They have, of course, left the most of their animals here with friends. Well, we feel a great deal of good has been done, but do not expect entire relief until Congress takes steps to remove or care for the renegades who dwell here and encourage reservation Indians also to come and divide the spoils with them. Agent Day, no doubt, did the best he could to have them all go, but, as he himself said while here in Monticello, he had not much influence with this part of his tribe. He, no doubt, did very well, having such an able man to help him as Colonel Lawton, taking into consideration the ignorance of the Indians and it being also hard winter time. The Navajoes moved promptly over to their own side of the San Juan river, through the able management of their agent, Captain Williams, Seventh infantry, who came personally to Bluff and attended to his own Indians without being forced to by the government. Times look brighter; though some may think more might have been done, it is generally conceded that much good came out of the whole transaction. And the conservative citizens feel much relieved and thankful to all who did their duty. The community is well generally, and remember with kindness Governor West and Colonel Tatlock.

C. L. CHRISTENSEN,
Indian Interpreter.

In behalf of a number of thankful citizens.

THE SUGAR INDUSTRY.

On Page 71, in your weekly issue of January 5th, 1895, I see that the management of the Lehi Sugar factory has announced its inability to operate longer unless there is a reduction in the price of sugar beets delivered at the factory. The same article also states that the cost of sugar beet culture in California is $2.07 per ton, but I have a report before me, given by Richard Gird, of Chino, San Bernardino, Cal., under date of August 5th, 1893, in which he gives the cost of raising beets for the Chino Valley Beet Sugar company in 1892, at a cost of $1.45 per ton delivered to the factory.

I herewith send expense statement of E. Robertson:

Plowing and harrowing 10 acres	$ 20 00
Seed 14 lbs. per acre	15 00
Thinning	44 00
Hoeing	18 00
Cultivating	6 00
Topping	78 00
Hauling to factory 222¼ tons	106 00

Land, of course, is outside of land rent.

In another report taken from the Chino Valley *Champion* of November 17, 1893, Mr. George C. Moore reports raising in 1893, 749 tons of sugar beets from 36 acres, at a cost of less than $1 per ton delivered to the factory.

Gusta son brothers, Louis, Victor and Charles, report raising 20 acres of beets at a cost of $1.34 per ton. Expenses:

Plowing twenty acres	$ 40 00
Harrowing twice	12 00
Seed	30 00
Seeding	8 00
Thinning	80 00
Cultivating twice	12 00
Weeding	20 00
Topping	108 00
Plowing out beets	40 00
Hauling to factory, 436 tons	174 40
Tare and factory expenses	60 20
Total expenses	$584 60

So far as plowing, harrowing and cultivating goes, it is a very good price for Utah rates. As to the rest I am not posted. But wheat farmers generally cannot afford to pay more than three bushels of wheat per acre for plowing and harrowing, which at 45 cents per bushel is $1.35 per acre. And in a general way if grain farmers pay more than one bushel of wheat per day out of his crop for farm labor he will soon find that the wage worker will be farming the farmer. So there is no doubt but the beet raiser may be able to raise beets as profitable to him at say $4.00 per ton delivered at the factory as the farmer can raise wheat at from 35 to 45 cents per bushel, which is the present price, delivered at the mills.

In conclusion permit me to say it would indeed be a great calamity to Utah, and especially to Utah county, to allow this large industry to collapse, for it is estimated that 60 pounds of sugar per capita is used in the United States. (In 1891 it was estimated at 67 pounds per capita.) At this rate this Lehi factory is able to supply one-third of Utah's consumption, and if it collapses we may be assured that sugar will take a jump upwards. Far better had our legislature give a bonus of 1 cent per pound to aid this enterprise wage warfare against the mammoth sugar trusts who are trying to break down the Utah industry. Indeed, better had those who have a common interest in Utah pay 1 cent per pound more for Utah sugar than for the imported article, for the Utah factory acts as a balance wheel to keep the imported article down. Yes, indeed; better had the beet raisers work for small wages than have their children traveling around as cosmopolitans in our metropolitan cities. P. L.

HARRISVILLE, Jan. 7th, 1895.

ABOUT STORING ICE.

The simplest kind of a structure will keep ice. A cheap board building with cracks battened will answer the purpose. For a permanent house it is well to build a brick or stone foundation and to bed the sills in mortar. The walls should be double and can be made so by using 2 by 8 lumber for studding. Line both sides with paper and board up tight, but do not fill in. Let the roof project on all sides or build under the shade of a tree or on the north side of a larger structure. Always leave plenty of ventilation at the gable ends. Have a drain at the bottom extending out a considerable distance. Cover the mouth of this drain in the house with a wire screen and then cover the whole bottom with a layer of sawdust a foot thick.

The keeping of ice depends quite as much on the packing as on the house in which it is stored. Sawdust or dry tan bark furnishes the best packing material. The next best is chaff or cut straw, and after these uncut straw.

In a structure such as we have described, ten inches of sawdust on the sides is sufficient, or twelve or fifteen inches of cut straw. Do not put a thick layer of sawdust on top of the ice—six or eight inches is enough.

Fill the house in freezing weather only for the best results. Have the cakes as nearly uniform in size as possible and pack closely, filling cracks with pounded ice to make the mass as solid as possible. The advice is often given to pour water on after filling, but the *Farm Journal* says this is unwise advice, so don't do it. Forty cubic feet of ice will make about a ton. The size of the house wanted can be figured on this basis.

In some directions given by *American Cultivator* on building and filling icehouses attention is called to a new material for packing known as mineral wool. It is mineral and of course is not wool at all, though it looks and feels like wool. It is the glass fibers made in refining iron ore by the action of heat on the particles of sand it contains. The cost of mineral wool if near a factory will probably be near $17 per ton, but its bulk in proportion to weight is so great that it cannot be transported far. It is the cleanest and best nonconductor of heat. It contains a great amount of air, and when laid in walls is a nonconductor of heat and of sound also. No kind of insect or other vermin will live in walls where the filling is with this glass material. For this reason, as well as a nonconductor of heat, it is considerably used for sheathing dwelling houses. It also greatly retards destruction when houses are attacked by fire.