

## WHAT SHALL BE DONE WITH THE SURPLUS WATER OF GREAT SALT LAKE?

Saltair Pavilion and the Lucin Cut-off Doomed and the Western Pacific "Up Against It," Declares a Special Contributor to The Deseret News.

SHORTLY after the writer arrived in Utah in the year 1877, upon learning something of the history of Lake Bonneville, and the general topography of this intermountain country, it at once occurred to him, what an immense engineering problem would be presented to Utah if there should be a decided increase in the precipitation in the Bonneville basin. Such a condition now confronts us!

Ever since the writer has been a close student of the cause and effect of climatic conditions in this intermountain country. Every student of physics knows that the saturated air becomes the greater amount of moisture it will take up before it arrives at the point of saturation; also, that when warm, moist air comes in contact with a high mountain range, or meets a colder current of air, or its temperature is lowered in any way below its saturation point, its excess of humidity must at once be thrown down as precipitation in some form, be it rain or snow. Practically all the additional moisture we get in this basin must be brought in from the south by a prevailing wind of some duration. From the east we cannot have a prevailing wind, for the trend of the high mountains east of us, and even should a moist, warm wind blow from the east for several days, its excess moisture would be thrown down on the coast, and the range coming to the cooling effect of the high altitudes; so that even if the wind should get over the mountains into this basin, its relative humidity would be low, and it could give us no precipitation. The same is true of air currents from the west, owing to the coast ranges. Ditto from the north, but in a less degree, but to make up for that, an air current from the south is continually growing warmer, so that its relative humidity is constantly falling. That the above is true, can easily be seen by anyone who has noticed that every general storm here is preceded by at least two or three days of wind from the south, which brings the warm, moist air from the Pacific and the Gulf of California, and when this warm air is met by a cold wind from the north, we get the storm. Anyone that has not noticed this can easily verify it by observing for a few months.

### SALTION SEA THIS CAUSE.

Now, as to the decided increase in precipitation, that is causing and will continue to cause the lake to rise for some time, so that it is a menace to the coastal interests of Lake Valley.

In 1908, while the Southern Pacific was trying to close the break in the bank of the Colorado, and prevent it from filling the Saltion sea, the writer made the prediction to a railroad agent that if they did not succeed, "the Southern Pacific would lose the Lucin cut-off inside of five years."

Had they failed we would have, or be rapidly approaching, the same climatic conditions that existed when the Saltion sea was the outlet of the Colorado, and the sea was overflowing into the Gulf of California, and at the same time the water of Lake Bonneville was at the level of the sea level, and the foothills, and was overflowing the basin of the basin through the Bonneville river into Snake river. However, they succeeded in closing the break, and instead of having about 4,000 square miles of water in the Saltion basin, there was only 400 square miles. This body of water is now disappearing at the rate of about six vertical feet per year, which means that there are being lost gallons of water taken up by the air from the surface of this body of water alone, during the first year, so that the amount of water evaporated from this source is constantly growing less, but this is more than equalized by the constant increase of evaporation in the same basin, caused by the greater amount of land irrigated and cultivated in the Imperial valley, so that it will not be long until all of the surplus water of the Colorado will be evaporated in the Saltion basin.

### EFFECT ON UTAH CLIMATE.

Now, some readers will at once ask, "But how can that affect the climatic conditions of Utah at such a great distance?" The answer to that: When the humid winds leave the gulf on their northward course they pass over several hundred miles of the hottest area in the whole north temperate zone, and they are so superheated when they reach the Saltion region, where the evaporation is greater than at any known point on the whole earth, that they are in perfect condition to absorb and carry off diffused moisture with which they may come in contact, not only that, but on their route from the Saltion basin to this, they continually take up more moisture through the increased evaporation caused by the greater natural vegetation due to the greater precipitation on the route over which they pass, so their humidity is so great that they are almost at the point of saturation even at their own temperature upon arrival.

From this, there can be but one result, increased precipitation in this basin, and the lake must rise. But another fact that cannot be controverted is, at this altitude, increased precipitation causes a decided loss of temperature, and higher relative humidity of the air, consequently we will have more frequent local storms and of increased precipitation which still further lowers the temperature, and thus the relative humidity. But another effect of the lower temperature and higher humidity is that, when the general storms occur, as there is already more moisture in the air, the precipitation of that storm will be just that much greater, so that increased precipitation works in an endless chain, consequently the increase of precipitation is at least the square of the increase of the additional moisture brought into the basin.

Now, as to the rise and fall of the lake, the cooling effect and the greater humidity of the air caused by more rain, decidedly diminish the heated sea, during which the lake receded and not only decidedly lessens the daily evaporation of the water of the lake, but during that period the heated sea and the evaporation of all streams and their tributaries which flow into the lake, so there is considerable more water flows into the lake during that period.

### PRECIPITATION FIGURES.

Anyone can see, by comparing the year's rain fall and the rise and fall of the lake during the years such record has been kept, whenever the total precipitation for the year has reached the neighborhood of 15 inches, the lake has risen, when less than that, it has fallen.

In 1906 the total precipitation was only 14.2 inches and the lake rose only until May when it reached the height of 3.10 of a foot above the zero mark established by the weather bureau, from which all records are taken, a loss of 2.10 of a foot from the high of .04, and fell until November, when it reached 1.10 feet below zero, the lowest point reached in its known history, a fall during that time of 1.5 feet. During 1908, the year the Colorado break occurred, it jumped to 21.28 inches, and the lake rose until July, owing to the greater rainfall and consequent lower temperature, to 1.4 feet above zero, a gain of 0.6 foot from the high of the previous year. For 1907 it fell to 18.25 inches owing to the decreased

area of the Saltion sea, and the check of the increased irrigation in the Imperial valley caused by the break, but the lake rose to 2.8 feet, a gain of 2.4 feet, showing the full effect of the heavy precipitation during the fall and winter of the previous year, and fell only until October to 2.9 feet, a loss of only .05 foot. In 1908 it was 20.85 inches, the increase showing the increase of irrigation was beginning to compensate for the loss in the area of the Saltion sea, and the lake reached its height again in July at 4.1 feet, a gain of only .11 feet. This year it reached its height of 2.7 feet once more in July, a gain of 1.4. What the total precipitation for this year will be, of course will not be known until the close of the year, however, its excess up to September 1, was 2.01 inches as compared to 2.64 for the same time last year, so it is likely the precipitation for this year will be greater than that of last year.

How high will the lake rise? It will certainly rise until the amount of water taken up by the increased evaporation causes the lake to recede, and the lake, equals that which flows into the lake.

### PREDICTS GREAT RISE.

At what time, or at what height, this point will be reached, the writer is not prepared to say, but it is certainly as high as it was in 1886, when it was about 8 feet higher than at present. The writer feels quite sure it will rise higher than it has ever been since the first advent of a climate man to this basin.

Some optimists, and some pessimists, will at once say, both! We had cycles of wet and dry seasons, and corresponding rises and falls of the lake, and we will have a dry cycle before the rise in the lake can do much harm. True, as to the time of years that were wet and others that were dry, but we have no data of conditions that existed during those times in the stretch of country between the Gulf of California and this basin. Had we such data we would undoubtedly find that during the wet years, for some reason, the evaporation was considerably greater than during the dry, in that same stretch. At present only increased evaporation in the Saltion basin can be foreseen.

As to the damage that will ensue from the continued rise of the lake for the next few years, the Western Pacific has during the last two years expended large sums for raising and repairing their track at the edge of the lake. Far greater expenditures are facing them, if they expect to keep out of the water on their present right of way. They might possibly arrange to run their trains over the San Pedro line to some distance beyond the point of the mountain, and from there establish a new line so as to keep out of the water of the lake, but that will cost them an immense sum.

During the storm in the last two years the Southern Pacific had to discontinue trains over the Lucin Cut-off, and afterwards was to quite an expense in repairing, strengthening and re-rapping their grade. Should the lake rise no higher than it was in 1886 they would be at the mercy of every ordinary storm, and it is very questionable if they would be able to hold their right of way.

### OUTLOOK FOR SALTION.

As in Saltion, they have already gone to the expense of building new bath-houses over shallower water, and the bath-houses farthest out in the lake are of little use to them. A further rise will mean the moving of the bath-houses, or abandoning them, and ultimately losing them altogether, and the expense of building new ones to take their place. After a heavy storm in the winter of 1908 when the lake was at its present height, the watchman of the pavilion told the writer that during the height of the storm the waves smashed on the dance floor, that he spent the night on the highest floor of the pavilion, and part of that time he never expected to set foot on shore again. Should the lake rise only six

feet higher, how many people would have to be at Saltion during a storm?

The Island Salt company is at some time liable to lose its salt ponds, which means another loss.

Even the San Pedro may have considerable expense in raising and re-rapping their track, or possibly will have to move in the right of way at one time occupied by the old Utah Western narrow gauge railroad. What would be the aggregate of the above losses? A sum simply immense!

What natural phenomena could relieve this situation? Nothing less than a cataclysm of nature, that would either so change the topography of this country as to give the lake a natural outlet, or completely change our climatic conditions.

What could be done artificially to save this loss? The only plan that appears feasible to the writer, would be to excavate a canal and bore a tunnel through the Snake range, from the northernmost point of the lake, some miles near Keilton, to a point near where the Snake river empties into Snake river. This could be so run as to keep the lake at its present level, which level, or perhaps a couple of feet lower, seems to be the height of this lake best suited to present conditions.

### TUNNEL THROUGH MOUNTAINS.

This would require a canal and tunnel 15 to 20 miles long, which would require the expenditure of such a sum that the writer would not even venture to guess its size. However, it would scarcely cost as much as it would save.

The writer would earnestly urge the "wiseheads" of the "powers that be" and of the eastern interests of this state to get together, and take some concerted action in this matter, and at least provide for a preliminary survey and rough estimate of cost at once, for it will take a long time to complete such a project, and the sooner it is started, and completed the less it will cost and the greater the losses avoided by its construction.

The writer would say to them, do not let the old adage "better late than never," be written on a page of your history, and in the language of the philosopher, "Don't be a coward, but 'ave a nerve on'."

The state would surely give material aid, and the United States government, if properly approached, would make an appropriation of a large sum, so at least they should certainly do so, as they are directly responsible, as they granted the permit for the irrigation scheme of the Imperial valley, which caused our present conditions.

The present century is an epoch of great undertakings, and the above is surely not beyond the powers of the able men of this state to accomplish successfully.

If so, the writer's opinion of them will be considerably lowered. A small matter, but which it may be well to mention in this connection, is in regard to the surplus canal of the Jordan. For several years, owing to the lack of precipitation, it has not been necessary to use it, consequently it has been neglected, and allowed to fill up, and in need of repair. Last spring it was badly needed, and it certainly was wanted next spring, so that Salt Lake City should by all means, this winter, clean out and get it in repair for the spring.

As this is the writer's "maiden effort" to appear in print, he asks the reader to be charitable in his criticisms of the style and diction of this article, but hopes and trusts that experienced persons will give the ideas herein conveyed the thought and consideration they deserve.

Should anyone wish to meet the writer, they can make an appointment through the publishers of this article, and he would be pleased to meet them, and if they so desire, discuss this matter to their heart's content.

Murray. CARL A. RAHT.

## The City-Bred Boy the Coming Man

LOOK to the city-bred boy for the great things in the future. The country-bred boy is having his day now, but in the next generation the great men of the country will be those who have been bred in the cities.

So says John H. Finley, president of the college of the City of New York, and himself country-bred. He declares that the city-bred boy has been much maligned, in addition to the fact that today he is far outstripping his country-bred rival.

"Nearly everywhere today the country-bred boy seems to be doing the big things. He is the most successful lawyer, the most successful physician, the most successful financier, and so on. This is only natural, because 50 and 60 years ago most of the children were born and bred in the country. The population of the cities was very small. Consequently there is no greater fallacy than to believe that the country-bred boy is better equipped or more liable to achieve success than his city-bred cousin. The country-bred boy has and always will have some advantages, but these advantages are ever-balanced by the advantages of the city-bred youth. What the city boy lacks in the way of strength, health and self-reliance he can acquire with the proper training. And naturally his city training places him far ahead in other respects which tell in life.

"But the great reason why I believe the city-bred boy and not the country-bred boy will do the big things in the future is this: The great problems of the future will be city problems. The men who have been bred in the cities, who understand them and who have had the training, will solve these problems.

"The great need of the city-bred boy is physical education. The college and university have not done enough along that line. Physical education has only been for those who needed it least. It has only meant work in the gymnasium or on the athletic field.

"The real physical education that the city-bred boy needs is more than work in the gymnasium. He needs instruction in hygiene, frequent medical examinations, not only to correct but to prevent physical ills, and proper exercise combined.

been constantly going on. The country boy, on the other hand, has been brought up close to nature. The things he has seen have remained unchanged or changed slowly. He is at a disadvantage.

"This naturally leads to the question: Is not the youth who attends a college or university in a large city better fitted to go out into the world than the youth who attends a similar institution in a small town? On the whole, I think he is. Of course, it depends upon the individual, but there is no doubt that the advantages a college student has in New York, for instance, are far greater than those to be had in any small community where the college is the principal thing. There are more distractions here, to be sure, but if a youth is serious and makes the most of his opportunities he can accomplish more right here in New York than anywhere in the country. There are some boys, of course, who ought to be sent away to school, and if their parents live in New York some other smaller city is perhaps better for them. But for the boy who can avoid the distracting influences, and who wants to make the most of his opportunities New York is unsurpassed as a college town, and no other city for the youth who wants to work his way through college or at least earn some money toward his support during his college course. There is a greater variety of employment here than in any other city in the country, and work and study can be better combined here than elsewhere.

"The two most important things that I want to impress upon the youth who are entering their college work next week are thoroughness and accuracy. One great fault of the college student of today is carelessness. He is not thorough enough in his work or in his play. The German or English student

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## TOLERANCE OF ISLAM.

The phenomenal political and social changes within recent months in the Mohammedan orient, especially in Turkey and Persia, have in many circles aroused the hope that new Christianity will conquer that wide domain of Christian lands in east and northern Africa taken from it more than a thousand years ago by the followers of the prophet of Mecca, and that Islam, as a religion and as a distinct and separate type of culture and civilization, will rapidly disintegrate before the forces of western and Christian ideas.

Turkey, it seems, was granted religious liberty through the constitution of July 24, 1908. The overthrow of Abdul Hamid II on the 27th of April, during the present year, confirmed this constitution anew, and made freedom of conscience the law of the land. In the very first session of parliament under the new sultan the question was seriously discussed whether Islam was still to be regarded as the official religion of the Turkish empire. The Young Turks are extremely desirous that they should be considered by the rest of Europe as thoroughly modern men, and in their struggle with the old Turks they have need of the help of the Christians and dare not offend them. But notwithstanding all this, it remains to be seen how the Mohammedans will in practice take to religious freedom. Legally a Moslem at the present time can become a Christian without being condemned to death on this account, as was formerly the case, and the work of Christian missionaries among the Mohammedans

can now no longer be suppressed legally. An impression prevails that in Islam, politics and religion are so intimately interwoven that the political disintegration of the people of this faith, the Mohammedan lands, will bring with it also a religious disintegration. The actual history of Islam during the nineteenth century does not warrant any such conclusion.—Current Literature.

Mr. F. G. Fritz, Ogden, N. Y., writes: "My little girl was greatly benefited by taking Foley's Kidney Pills for constipation and liver trouble. Foley's Kidney Pills is mild, pleasant and effective, and cures kidney, liver and bladder troubles. 'The never substitutes,' Salt Lake City."

## Closing Out Sale of CARPETS

Next week will mark one of the most interesting weeks in carpet sales ever recorded in the city. Commencing Monday Morning, October 18, and for one week, we will close out our entire line of carpets at prices lower than jobbers' prices. We are going out of the carpet business and will close every yard out, no matter what the sacrifice may be. Here are a few prices quoted below. All carpets made, laid and lined free.

### Six Patterns in Sultana Carpets

New and desirable, regular price 45 cents, close out at

30c

### Extra Super Union

Choice selections, regular 69 cents, close out at

40c

### Extra Quality C. C. Wool

Regular 96c, close out at

60c

### Extra Quality All Wool

Private brand, sell regular \$1.19, close out at

75c

### Tapestry Brussels Carpets

The patterns in this fall in most cases are copies of the higher priced goods; the assortment of colorings and designs is unusually large and pleasing, \$1.20 quality now, per yard

75c

\$1.40 quality, now per yard

90c

These include the celebrated Hartfords and Alexander Smith & Sons production, soft long pile fabrics, that are rich in effect and extremely durable, per yard

\$1.42

### Axminster Carpets

FOR THIS SALE WE HAVE PLACED 500 MARTHA WASHINGTON RUGS AT PRICES UNHEARD OF BEFORE.

\$1.35 RUG NOW—

95c

\$1.50 RUG NOW—

\$1.05

\$1.75 RUG NOW—

\$1.20

\$2.00 RUG NOW—

\$1.35

\$2.50 RUG NOW—

\$1.75

\$3.50 RUG NOW—

\$2.40

All Carpets Sewed, Laid and Lined Free.

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Eccles Building, Logan, Utah.

## Great Land Sale, Oct. 20, 1909.

40,000 ACRES 40,000

Situated in Blue Creek and White Valleys and near Promontory in Box Elder County, in Townships, 12, 13 and 14, N Range 4 West, 11, 12, 13, and 14 N. Range 5 West, 10, 11, 12, 13, and 14 N. Range 6 West and 10 N. Range 7 West.

All bids should be marked "BID ON PROMONTORY-CURLEW LANDS" and delivered or mailed in another envelope to the Company.

Terms of sale, one-fifth cash, balance in ten equal annual payments at 7 per cent interest per annum.

This land is some of the choicest dry farm, and grazing land in the state of Utah, the farm land being the equal of the famous dry farm lands of Cache Valley.

A townsite to be known as Howell is being surveyed, and 3,000 acres of irrigated land, surrounding the townsite in the Blue Creek Valley is being surveyed into ten acre fields. These lots and fields will soon be placed on the market and offered to purchasers and owners of dry farms in this locality.

The land has been appraised mostly in sections, in a few cases parts of sections, the price ranging from \$2.50 to \$25.00 per acre.

Sealed Bids will be received up to 10 o'clock A. M. on above date at which time they will be publicly opened at the Company's office above stated, and the land sold, in parcels as appraised, to the highest bidder, except that no bid will be received that is below the appraised price.

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