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### Tum-a-Lum Lumber Company

Dealers in Building Materials of all kinds. We have come to stay and have just completed our improvements. We have one of the largest stocks to select from found in Crook County. We sell the genuine Rock Springs Coal, free from slate and give 2000 pounds for a ton. We deliver in the city. Phone.

### Tum-A-Lum Lumber Company

WM. W. ESSELSTYN, Local Manager

Madras - - - Oregon

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Wholesale and Retail Dealers  
FRESH AND CURED MEATS

We have the best line of Fresh Meats in the country

ALL KINDS OF GARDEN VEGETABLES IN THEIR SEASON

Now is the time to do your buying

### Everything at Cost for the Next Ten Days

Millinery, Ladies' Furnishings, Dolls, Hand Painted China  
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Save Your Tickets for Silverware

MRS. ISA E. B. CROSBY

## Ashley Bros.

FOR

WOOD and COAL

O. W. R. & N. Depot

Deliveries at any place within city of Madras Phone Orders

## Start the New Year RIGHT

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### The Madras Pioneer

THE PAPER WITH THE CIRCULATION

We do all kinds of

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Letter Heads, Note Heads, Bill Heads, Envelopes, Posters, Legal Blanks, Wedding Announcements and Invitations.

Give us your next order  
CALL OR PHONE

### Some Principles of Soil Moisture

(Continued from page 3)

we say there is a temperature or thermal movement.

Water is held in two ways in the soil, as a film which surrounds the soil particles and in the tiny spaces between the soil particles. When it rains water enters the soil. When the surface gets more water than it can hold it ooses some by percolation to the soil below. That is, some of the free water flows from the soil spaces above to the soil spaces below. This process continues as long as it rains and for a time afterwards, depending on the amount of the rain.

When percolation ceases another movement begins. The films begin to crawl from particle to particle as water in a lump of sugar, only much slower. Very dry soil wets very slowly. But when the particles are very slightly moistened, they tend to draw water from the moisture toward the dryer particles. This movement continues until the pull away is balanced by the pull to hold.

Most deep soils in the regions of moderate rainfall have their subsoils thoroughly wet, in fact they are rarely ever moistened beyond a depth of a few feet. The rains wet the surface. A portion of the water penetrates a little further in. After percolation ceases, the water penetrates a little further by the film movement. In such deep soils free water moving in the soil spaces does not exist for any length of time. The water is all held as thin films around soil particles. These are stretched as thin as they can be by soil attraction, because there is always dry soil trying to pull it away from the moister soil above. This condition is a balanced one, one portion of soil trying to pull the water away and the other resisting with equal strength. We call it the minimum capillary or film capacity.

But all the water a soil contains is not available for the growth of plants. Plants can take out only a portion. Some plants can take out more than others. For instance, sorghum will dry out a soil more than wheat. Wheat will take away more water than corn. Russian thistles and sunflowers will dry out a soil worse than any crops which we try to grow for profit. Most crops will dry out a sandy soil so that only 2 to 4 per cent of moisture remains.

Under normal dry farming conditions, there is very little movement of the soil moisture except after rains. The soil water does not move to the plant roots. The roots move to the moisture. If one will take a dish of wet soil and sprinkle dry soil on top, water will move up into the dry soil. If this is then scraped off and dry soil again sprinkled on top and scraped off when moistened, a point will soon be reached when the dry soil will no longer be moistened. We will then have a condition comparable to dry farming soils, except immediately after rains. This is the minimum capillary or film condition already mentioned. In such condition the soil water does not move unless more water is added or the temperature changes so as to alter the soil water relation.

Experiments were made in California to determine the water loss by evaporation. The experiments were run from June to September. The average evaporation from a saturated soil surface was 4.88 inches per week. When the moisture in the surface soil was about 11 per cent the evaporation was less than 1 inch per week. Most dry land soils do not lose their moisture by evaporation. The moisture is lost by plants which use up the soil water in growing. In order to conserve the soil water plants must be kept from growing while it is being conserved.

Dry farming lands have a limited amount of water for growing crops. Consequently any more crop than the land will support results in reduced yields. The stands of crop must be thinner to produce the best results than in humid or irrigated regions. If too many plants are on the land none will get enough water and failure will result. The best results are obtained with relatively thin stands.

### A Mail Order Deal

Down in Oklahoma the other day a man went into a store to buy a new saw. He saw the kind he wanted and asked the price. It was \$1.65 the dealer said.

"Good gracious," said the man, "I can get the same thing from Sears Roebuck & Co. for \$1.35." "That's less than it costs me," said the dealer, "but I'll sell it on the same terms as the mail order house just the same."

"All right," said the customer. "You can send it along and charge it to my account." "Not on your life," the dealer replied. "No charge accounts. You can't do business with the mail order house that way. Fork over the cash."

The customer complied. "Now 2 cents for postage and 5 cents for a money order."

"What—?" "Certainly, you have to send a letter and a money order to a mail order house, you know."

The customer, inwardly raging, kept to his agreement and paid the nickel.

"Now 25 cents expressage." "Well, I'll be—," he said, but paid it, saying, "Now hand me that saw and I'll take it home myself and be rid of this foolery."

"Hand it to you? Where do you think you are? You're in Oklahoma and I'm in Chicago, and you'll have to wait two weeks for that saw."

Whereupon the dealer hung the saw on the peg and put the money in his cash drawer.

"That makes \$1.67," he said. "It has cost you 2 cents more and taken you two weeks longer to get it than if you had paid my price in the first place."—Square Dealer.—American Lumberman.

### COLORADO RIVER BASIN.

A Region of Vast Agricultural and Industrial Importance.

There is no more interesting river in the world than the Colorado. Industrially, scenically and geologically it presents more diverse conditions than any other stream in the United States.

From the crest of the Rocky mountains in Colorado and Wyoming it sweeps across the intervening country, traversing parts of Utah, New Mexico, Arizona and Nevada to the head of the gulf of California. The area drained being about 300,000 square miles. In the Rocky mountain region it flows through a country covered by eternal snows and waters some of the most fertile and valuable agricultural lands in the world in western Colorado, northwestern New Mexico and eastern Utah.

It traverses the famous Grand Canyon of the Colorado, in the northern part of Arizona, and finally passes over the broad, flat plains above the head of the gulf of California. In this lowermost portion the river strongly resembles the Nile, having annual floods which distribute silt over the adjoining lands and render them as fertile as those in the historic valley of north Africa.

The Colorado and its tributaries have other values than that of irrigation, for, descending in steep channels, they present abundant opportunities for the development of water power. Power has been developed at a few points, but the resources of the Colorado basin are in this respect yet practically untouched.

The size of the Colorado river is indicated by its total discharge in the year 1909, which was 26,000,000 acre feet, or enough water to cover that number of acres to a depth of one foot.—United States Geological Survey.

### REGULATE STREET TRAFFIC.

Redlands (Cal.) Engineer Uses Guide Lines on Corners.

A plan to avoid the congestion of traffic which can be used to advantage in most cities has been devised by City Engineer Hinkley of Redlands, Cal. It consists of a strip of bright aluminum paint, with guiding arrows pointing to the right courses, which are more suggestive than signs could possibly be.

The guiding line runs along the center of the street, keeping its proper position on curves. In approaching a curve, where drivers of rapidly moving vehicles have a tendency to "cut corners" instead of keeping on the proper side of the road, the device is of special value.

Drivers would readily learn to observe and follow the guide lines, especially in streets of heavy traffic.

### Protection Against Acid.

Jumpers and overalls used when working about acid can be made impervious by rubbing the goods carefully all over with a piece of beeswax or paraffin and ironing with a warm smoothing iron.

### I. O. O. F. Lodge

Meets every Saturday night. Strangers are welcome.

Charles Ortman, N. G.

Lewis H. Irving, Secretary

## COLONIST FARES

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From the Middle and Eastern portions of the United States and Canada to all points in the Northwest on the

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From CHICAGO	\$33.00
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Proportionately low fares from all other points. Direct service from Chicago, St. Paul, Omaha and Kansas City over the C. & N. W., UNION PACIFIC, OREGON SHORT LINE AND O. W. R. & N. Lines Protected by Automatic Block Signal

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of your acquaintance there must be many who have bought their jewelry here and they ought to be the best judges of what bargains they got for their money. Engagement, wedding and mourning rings, Signet and Keeper Rings, Gold and Silver Watches—the best timekeepers ever made—chains, charms, brooches, bracelets, thimbles, etc., ear-drops, etc., etc.

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Jeweler Madras, Oregon

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Capital stock \$5000.00 Surplus \$3000.00 fully paid up.

Abstracts of title to all real property in Crook county.

Carefully prepared photograph copies of all records and city plats at low cost.

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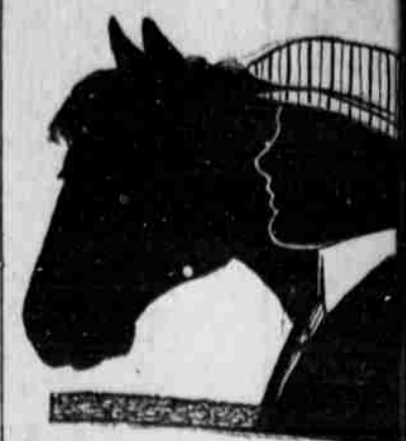
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For

ROLLED BARLEY  
and WHEAT HAY

P. W. Ashley, Agt. Phone Your Orders

## Between You and Your Horse



there ought to be a perfect understanding. You may feed your horse well but do you clothe him well, too? Is his harness comfortable and right fitting? If not give the animal a treat and bring him to us for "a new suit." He will be as proud as you are when he gets it on. We make the best Harness, in sets and singly, and give our patrons the most lasting satisfaction.

## Larkin Harness Shop

NO. 3851.

### The First National Bank

OF PRINEVILLE, OREGON  
B. F. ALLEN, President. T. M. BALDWIN, Cashier.  
WILL WURNEWILKE, Vice Pres. H. BALDWIN, Asst. Cashier.  
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### Send For This Seed Annual-Free

Lilly's seeds are tested for purity and germination. No seeds are packed by us unless these two conditions are the very highest standard. Our fully equipped laboratory under the direction of a scientist and expert seed tester removes all grass weed. When buying Lilly's seeds, you get increased crops. Send for catalog. The Chas. H. Lilly Co., Seattle

