

U. OF O. MAN CLAIMS GREAT ROAD-BUILDING DISCOVERY. "PUZZOLAN" IS A NEW ROAD MARVEL OF U. OF O. MAN

Element in Certain Oregon Soils Discovered That Is Expected to Make Concrete Roads Very Cheap.

(Special to The Journal.)
University of Oregon, Eugene, Or., Feb. 22.—An investigation on the part of the engineering department of the university, just completed, covering a period of study of road conditions in Oregon, has resulted in discoveries which may revolutionize road construction. It has been found that the state of Oregon has as an element of much of its soil certain volcanic materials which, mixed with Portland cement in proper proportion, not only increase its strength, but decrease its cost to such an extent that concrete roads, surfaced with bituminum, can be built at a less cost than macadam roads, thus giving the country the hard surface pavement of a city at an expense less than is now expended for crushed rock and dirt roads.

Dean McAllister Discovers.
The report of Dr. E. H. McAllister, dean of the university school of engineering, upon this subject, which will be made public in about two weeks, covers every step in this investigation, from the actual proportions for mixing the concrete to an analyzed statement of the cost of construction. At present the average cost for construction of macadam roads, averaged for Oregon, and also for the entire United States, including a 10-year period of maintenance, is \$1.051 per square yard. The cost of concrete roads, using the native element of the Oregon soil, with the concrete, would be \$0.95 a yard. The figures have been based upon actual road construction, upon a survey of road and soil conditions of Oregon, including the factor of climate and temperature, and actual laboratory tests of strength of the "blended" concrete.

No Calls It "Puzzolan."
"Puzzolan," a volcanic material, is the element which is to solve the problem of bringing concrete roads to a practical cost. It is well distributed in Oregon. The proportion with which it can be mixed with concrete varies with the locality, but analysis readily determines that. That which Professor McAllister has designated as "puzzolan" is found abundantly around Eugene and throughout the Willamette valley. Another type exists near Grants Pass; artificial puzzolan can be made from blast furnace slag from Oswego; still another form is termed "diatomaceous earth," found near Eugene, but deposits are not plentiful about the state.

Saving the Long Haul.
The great factor in favor of using a local material in place of cement is not necessarily the cost of transportation of the cement, but the cost of transportation of the cement is an important item. Nearly half the cost of the cement at the factory is saved and nearly half the freight bill is eliminated. This includes the cost of preparing the "blend," figuring upon mixing plants, machinery and the like, which has been carefully itemized. The cost of cement in Eugene in carload lots is \$2.45 a barrel net. Allowing for a three mile haul from the railroad to road plant, the cost rises to \$2.48 a barrel. Figuring at this cost for cement the cost for the blended cement is as follows:

Cement, 53 of barrel, at \$2.48.....\$1.315
Total cost of blending......33
Cost of blended cement, per bbl., \$1.645
At Portland the cost of such a blend should not exceed \$1.44, a figure figuring upon a cost of \$2.00 a barrel.

"Puzzolan" Not Wholly New.
The use of substances similar to "puzzolan" is not new. Los Angeles used a volcanic substance, called "tuffa," in the construction of its great 250-mile concrete aqueduct, in which 1,500,000 barrels of cement, or enough for 1200 miles of 15-foot concrete road. The German government, after prohibiting any blends for several years, has recently recently permitted the use of concrete construction following elaborate tests. The important consideration for Oregon is that the proper substances have been found to exist in large quantities all over the state; and, furthermore, analysis shows that Oregon's supply is of a very high quality.

Macadam pavement is rapidly falling in disfavor all over the country. The state of New York has spent \$65,000,000 upon macadam roads, but a few months ago, in popular election, \$50,000,000 was voted which will be used in tearing up the macadam roads and replacing with concrete. A curious fact is that macadam roads were the factors which made possible the adoption of power traction, including mechanical trucks and automobiles, to the country, and now it is the mechanical transportation agents which are tearing macadam to pieces, and necessitating a heavier type of road construction. This is eventually to be concrete.

Cost of Maintaining Macadam.
Macadam roads in Oregon, particularly in Lane county, cost to lay \$1.3 cents a square yard, in Massachusetts, not including contractor's profit, estimated at 20 per cent, 6-inch macadam cost \$1.7 cents; and in New York the same costs 57 cents. But the upkeep is the expensive feature of such roads. Of course, this varies under local conditions. Estimates range from 6.82 cents per square yard per annum to 26 cents a yard.

The annual cost of maintenance of macadam in Paris is said to be one-third of the cost each year. That is to say, a macadam road must be rebuilt every three years. The figures, collected by the United States office of public roads make the average cost of maintenance in this country 57 cents a yard a year, and double this for bituminous macadam.

Maintenance figures published only a few years ago appear to indicate, declares Dr. McAllister, "Massachusetts thought that it would be able to maintain its macadam roads indefinitely at 2.5 cents; in three years the cost has soared to 57 cents, and now the attempt to maintain macadam roads has been practically abandoned, and all sorts of surfaces, patented and otherwise, are being tried out in the hope of saving some of the many millions of dollars which the state has put into macadam roads.

The mileage of improved roads in Oregon is relatively insignificant. Traffic is small because no large traffic is possible, thus maintenance here is still

COUGAR LEAPS 60 FEET FROM TREE; HUNTER HURT

WOODCOCK WAS GIVEN THE PRIVILEGE OF SHOOTING FIRST, BUT HIS SHOT FAILED TO REACH A VITAL SPOT AND THE BEAST, WITH A BLOOD-CURDLING SCREAM, LEAPED FROM THE TREE AND LANDED SQUARELY AMIDST DOGS AND MEN.



Above—The cougar just after being killed. Below—The animal is longer than the tallest man.

Wamlie, Ore. Feb. 18.—Tuesday noon saw the termination of a short but red-hot chase after a large and ferocious cougar, in the western portion of the Smoek country, which is located some 20 miles southwest of this place, in which chase Henry Miller, Ed Woodcock, Matt New and Alvin Thornton succeeded in killing the animal after a short but desperate hand to hand fight. Miller sustained severe injuries to his body and arms from the cougar's claws and most of his clothing was torn to shreds. One of the dogs was killed and two others seriously wounded.

For the previous week numerous reports had come from that part of the country to the effect that there was a cougar in the vicinity, as several settlers had lost pigs, sheep and other domestic animals.

Miller, Woodcock and New, ever-ready sportsmen of Wamlie, left for upper Smoek Sunday noon, at which place they were joined by Thornton, a resident of that portion of the country. The chase began Monday morning, the tracks having been taken up with little difficulty, as the snow was from one to four feet in depth. They followed the trail faithfully all that day through the timber and night found the four determined hunters camped on the trail in three feet of snow. Having very little grub and no blankets, they suffered considerable hardship during the night, but at daybreak Tuesday morning they resumed the chase and not until noon of that day did they succeed in treeling the cougar.

60 Feet Up, Lying on Limb.
Thornton and New were first to reach the tree, and now which the dogs were howling and howling like so many maddened wolves. The animal was slung some 60 feet up the tree, lying flat length on a huge limb. At first the two men at the tree decided to shoot without further delay, but owing to the fact that the animal kept continuing to growl and howl, the two men, who are

low. But with the expected development of the state it is safe to say that within the next five years the figures here will have passed the cost record in some of the other places.

Depth of Concrete Required.
"It is my purpose to compare the cost of concrete with that of macadam. Four inches of concrete will withstand a greater strength than six inches of macadam. On the average, where traffic is not unusual, a concrete four inches of concrete is sufficient.

Personally I favor a concrete base, with a bituminous wearing surface, as adopted by New York and California, but I am also prepared to give an estimate for a two-course type of all-concrete road.

Not a Long Lived Surface.
"The length of life of this surface cannot be definitely stated; in the east the life of similar surfaces is not less than five years. But to be safe, I have cut this time in two, and assume that the maximum life in favor of the concrete type over macadam, or \$845 per mile on a 15-foot road. If cement were used without blending, the saving would be wiped out; but even then the concrete road could still compete with macadam road.

The Value of Roads in Money.
"This is not a matter of pleasure vehicles and picnic parties. It is an issue of bread and butter, many millions of dollars in mud taxes—the cost of 10 to 20 cents per ton mile for hauling is

SLOOP CAPSIZES IN PORT TOWNSEND BAY; FOUR GO TO BOTTOM

J. H. Moon, Ivan Moon, Francis Moon and Wm. Moon Die Dreadful Deaths.

(Entered Press Leased Wire.)
Port Townsend, Wash., Feb. 22.—Caught by a sudden squall while sailing in Port Townsend bay, a 22-foot sloop was capsized this afternoon at 2 o'clock and caused the death by drowning of J. H. Moon, his son Ivan, aged 18, and Francis Moon, aged 19, and William Moon, aged 19, sons of W. J. Moon, who was rescued. Two soldiers of the Ninth-second Coast artillery, at Fort Flagler, were members of the party and are now nearly dead from exposure.

The party left from the harbor at 1 o'clock for a pleasure sail about the bay and the wind was blowing strong from the southeast at the time. The wind increased and was squally. When well toward the south shore of the bay at Shumway's spit, opposite old Fort Townsend, one of these squalls caught the sloop and quickly capsized it. The weather was cold and the icy water soon rendered the distressed people helpless.

The accident was witnessed from Irondale and a rowboat with Tom W. Holman, William Doole and Allen Fuller, at once left for the scene. When the rowboat reached the overturned sloop, three men were clinging to its sides. These were W. J. Moon and the soldiers, Warmouth and Manley. The other four members had been overcome by the cold and disappeared beneath the water.

Warmouth was at first believed to be dead, but was soon brought about enough to give hope of recovery. W. J. Moon and Manley were both unconscious when taken into the boat. A launch which had put out from Sloop bay, took the rescued men on board and proceeded to Port Townsend for medical assistance for the sufferers.

HOMER DAVENPORT'S UNCLE, PIONEER OF '51, IS DEAD AT SILVERTON
(Special to The Journal.)
Silverton, Ore., Feb. 22.—B. F. Davenport, an Oregon pioneer of 1851, died of heart failure at his home in this city Thursday at 4:20 p. m. He had been in poor health since Christmas, but only during the past few days did he show signs of being in serious condition. He was born at Columbus, Ohio, February 9, 1839. He crossed the plains, settling upon a farm near Silverton, which place was his home until two years ago, when he retired from active life and moved into town. He married Lucretia DeWitt. Three sons and one daughter were born, all of whom are living at this place. They are: Louis J., Doc C. and John H. Davenport and Mrs. Eunice Goodknecht. He was an uncle of the late cartoonist, Homer Davenport. He leaves one brother, John Davenport, of Hoquiam, Wash., and one sister, Mrs. Judge Orange Jacobs, of Seattle. Funeral services will be held in this city Sunday at 2 p. m.

an ever increasing tendency of the population toward cities.

"In view of the already rapid destruction of many well built macadam roads in Oregon, and in view of the universal conclusion that macadam is not adapted to modern traffic, such as motor trucks, road tractors and mechanical haulage generally, and in view of the fact that such traffic will in all probability be the prevailing traffic within a few years, I believe that any large expenditure in the future construction of macadam would be unwise and result only in bitter disappointment."

FIVE GENERATIONS IN TOLEDO, WASH. FAMILY



John Romack; his daughter, Mrs. G. W. Loomis; her daughter, Mrs. Frank Thorne; her son, Leslie Thorne; his son, Guy Thorne. The old man is past 85 years of age.

ORENCO, OR., COUPLE MARRIED 50 YEARS

LANDS PENDING



George Benton, 70 years old, and his wife, Minerva, 71, at Orenco, who celebrated their golden wedding anniversary last Wednesday. With them, in the picture, is their oldest daughter, Mrs. Mary C. Howard of Spokane.

FRUIT MARKETING PLAN DISPLEASES

Two Big Yakima Valley Concerns Propose to Unite Selling Agencies.

(Special to The Journal.)
North Yakima, Wash., Feb. 22.—The boards of trustees of the Yakima Valley Fruit Growers association and of the Yakima County Horticultural union met this afternoon and tonight in an attempt to find a way to unite the selling agencies of two big fruit marketing concerns of the Yakima valley. The two concerns handled more than 80 per cent of the 1912 crop between them.

The meeting was significant. The association is a co-operative organization of growers, the union stock company handling fruit for its stockholders and buying and selling that of outsiders. They have been rivals in marketing and in saving the lives of the boys were plainly seen. Ropes had been made fast to the mast and to these lines the two younger boys had been fastened. The boys had been insecurely tied and from the manner in which the lashings had been made it was seen that the fingers that had tried to protect them had been numbed by the cold and were unable to make their work strong enough to hold the little fellows.

CUMMINGS AND GOINS HAVE ANNUAL REUNION
(Special to The Journal.)
Albany, Or., Feb. 22.—Rural mail carriers of the counties of Linn and Benton took advantage of the George Washington birthday holiday to gather in convention in this city today. There are about 30 members of the organization, which they formed several years ago and which is known as the Rural Letter Carriers' association. Several years ago the members had a continual source of bitterness in the fact that one of the Benton county carriers was H. D. Cummings and one of the Linn county men was John Goins. The combination of coming and going at the same time and at the same place was always sufficient to raise a laugh.

JUDGE REVERSES FISHING DECISION

ROSEBURG, OR., FEB. 22.—JUDGE J. W. HAMILTON, IN HIS CIRCUIT COURT OPINION, FRIDAY REVERSED HIS DECISION OF THE DAY BEFORE IN THE CASE OF BERT TAYLOR AND HUGH PEARSON, INDICTED ON A CHARGE OF ILLEGALLY FISHING AT THE WINCHESTER DAM.

His first decision was that the statute under which the indictment was drawn was defective and the case was dismissed. His second and final decision is that the statute is applicable to the charge against the defendants, and he has placed their case back on the docket.

FARMERS AND GARDENERS ORGANIZE AT BEAVERTON
(Special to The Journal.)
Beaverton, Ore., Feb. 22.—An enthusiastic and well attended meeting of the farmers and gardeners of this vicinity, an organization was effected yesterday. This is a branch of the Farmers' Society of Equity. The following officers were chosen: President, I. L. Morelock; vice president, John Welch; secretary, C. J. Haggerty; treasurer, A. W. Pike. Another meeting is called in Grange hall, Tuesday evening, February 25, to which all farmers are invited.

Eight Frat Students Reinstated.
(Special to The Journal.)
Seattle, Wash., Feb. 22.—Eight high school students who were suspended last Monday when it was discovered they were conducting the Phi Lambda Epsilon fraternity, have been reinstated by the school board as a result of the prompt surrender of their charter. Principal T. R. Cole says that if any more frats are discovered the students will be expelled from school.

WILL MAKE YOU RICH IN THE MAIL ORDER BUSINESS
With an Idea and a Capital of Only One Hundred Dollars I Built a Business that Brought me SIX HUNDRED AND FIFTY THOUSAND DOLLARS in Eighteen Months Selling Merchandise by Mail. LET ME SHOW YOU HOW.

The New Parcels Post Means Millions to Mail Order People
MEN AND WOMEN, if you are making less than \$5000 yearly, let me start you quickly to great financial success. It's easy to make five hundred dollars monthly. I show you how it is possible with just a few dollars capital.

WALT C. CUMMINGHAM
America's Mail Order Wizard,
President of the Mail Order School.

I want to help men and women to success. My own success has caused me to be called "The Wizard of the Mail Order Field." I KNOW what others MUST KNOW to succeed. MY FREE BOOK TELLS HOW TO GET A BUSINESS OF YOUR OWN.

If you are one of the thousands of slaves of the pay check, grinding away the best years of your life for some other man's profit, let me show you how, while you are still receiving a salary and with very small capital, you can embark in a business that will free you forever from the grinding, body-breaking wage slavery. I will supply you a carefully devised, elaborately worked out and completely equipped set of 20 plans to select from and embark on. I will explain everything to you from basic idea to full operation. The whole mail order plan will be supplied you. It is the most complete, thorough and invincible instruction possible, each plan capable of earning you a splendid income. A FEW DOLLARS STARTS YOU AT ONCE.

I show you how to make the start with just a few dollars and the postman will soon wear a path to your door laden with letters and orders for the things that you need and want to sell.

RISE, GO ON AND UP! The road is clear, a glorious future summons you to the hills of betterment. DARE ON, YOU WHOSE SOULS ARE BROWNED WITH PAST DEFEATS. Twist your frown into a smile, because fortune awaits you in this business if you will let me start you now.

Even a ten dollar bill will start you right into making money with the plans I supply you, and with half of your profits from first orders put back into increasing your business, you can make your business grow into large profits. I will give you the full details of this CASH BUSINESS. YOU GET CASH IN ADVANCE WITH WHICH TO FILL ORDERS, so you don't need capital investment in a stock of goods.