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**GREAT QUANTITIES OF KELP  
FOUND ON PACIFIC COAST**

Washington, D. C., Jan. 22.—All along the Pacific Coast from Mexico to Alaska there is a vast quantity of fertilizing material in the form of giant sea-weed known as "kelp."

"This material," says an investigator in the Department of Agriculture's new bulletin (No. 150), "if treated by a process similar to that used to convert the waste from fish canneries into fertilizers, will yield a commercial fertilizer of particular value because of its relatively large content of potash. Any scheme for using kelp on a large scale as a fertilizer must be

based on some method of concentrating its valuable constituents because green kelp contains so much water. Investigations seem to show that at present, considering the economic conditions on the Pacific Coast, kelp may be best prepared for the trade merely by drying and grinding. Even wet kelp, which contains 85 per cent moisture, contains 2 1-2 per cent of potash, where stable manure,

alfalfa, and cowpeas all contain less than one per cent. Drying, however, increases the percentage of potash to 15.8 per cent. This commercial product also has 1.6 per cent of nitrogen and some phosphorous. On the retail market of the Pacific Coast the total value of a ton of kelp should be, according to estimates, \$22.94. In the eastern wholesale market it should bring \$16.45.

The main fertilizers termed "potash carriers" today used in this country are the German potash salts. Laboratory tests have shown that kelp is quite as effective as the potash salts, and dry kelp would enter the trade as a "potash carrier" to compete with the imported products.

Kelp has been used as fertilizer for centuries in the British Isles, and has been so valued there that lands carrying kelp-harvesting privileges brought special prices. In New England also kelp has been found valuable. The kelp on the Pacific Coast differs from the sea-weeds of the Atlantic because of their much greater size. Already this product of the sea gardens of the west has been used in Alaska, particularly in fertilizing potatoes and on truck gardens. Near San Pedro, Cal., kelp has been harvested mechanically and shipped in the crude, undried condition to the ranches and orchards of that part of the state.

**How Kelp Must Be Prepared.**  
The new bulletin of the department goes into considerable detail in describing how kelp should be harvested, dried, and ground into coarse powder for bagging and mixing.

Since the ingredients of kelp are either neutral or beneficial in their influence on plant growth, to prepare kelp for use as a fertilizer it is necessary only to convert it into a form in which it can be preserved and shipped. To accomplish this it is sufficient to harvest, drive off the water which it contains, and grind it to a coarse powder for bagging and mixing.

Kelp is harvested by a machine which embodies the principles of the mowing machine or reaper used in harvesting agricultural products. The harvester actually in operation consists essentially of a barge over the end of which projects an adjustable frame, supporting an endless belt, tilted to form an inclined plane. Across the lower end of the belt extends a horizontal cutting bar about 10 feet in length, of the type used in the construction of reapers, which is supplemented at each end by two perpendicular knives. By this arrangement a swath may be cut through the kelp 10 feet in width and of a depth determined by the adjustment of the supporting frame. Back of the knives the belt, constructed of chains and netting, is operated in such a way as to catch the severed kelp and lift it up into the barge. Beneath the upper end of the belt is a chopper into which the kelp drops and by which it

is cut into short lengths. From this it passes on into a short conveyor which loads it into a large scow made fast alongside. The small barge carrying the cutter is moved along the side of the large scow so that the load of cut kelp is distributed evenly. To operate the moving parts of the machine a gasoline engine is provided. The barge and scow are pushed through the kelp groves by a launch, which serves also to tow them to the dock for unloading.

The cost of cutting will be determined by the conditions obtaining at the place of cutting. The results obtained so far indicate that this will be not more than 50 cents per raw ton, and easily may be reduced to 25 cents or less, inclusive of unloading at the dock.

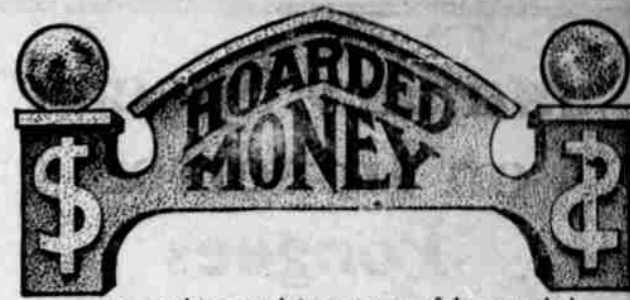
It cannot be expected that the cutter now in operation embodies all the perfections to which such a machine is susceptible, or that improvements in the machine will not reduce the cost of cutting. Certain features of the present method of operation are objectionable. But these almost certainly will disappear when a fuller experience shall have pointed them out and the means of circumventing them. Cutters of other forms and modifications of the present cutter have been designed and patented. In spite of its imperfections, the kelp cutter now in operation must be regarded as an unqualified solution of the problem of the economical harvesting of kelp.

The chopped kelp may be unloaded at the dock by an elevator such as may be used in unloading cannery waste.

Since, under Atlantic Coast conditions, fish pomace containing 55 to 60 per cent water may be dried in the direct-heat rotary drier at a cost of about 50 cents per ton, it seems reasonable to believe that it should be possible to dry kelp, containing 85 to 90 per cent water, at a cost of \$1 per dry ton. After drying it may be found desirable to grind the kelp for mixing. Dry kelp, especially when hot, is quite brittle and grinds easily.

**OFTEN TO MUCH CARE  
GIVEN APPLE TREES**

Oregon Agricultural College, Corvallis, Jan. 22.—It frequently happens that trees apparently healthy and vigorous refuse to blossom or bear fruit. This, according to Professor Lewis, chief of the Oregon Agricultural College division of horticulture, is generally owing to the vitality of the trees. "If your trees are on rich soil," says Professor Lewis, "or if there is too much manure or irrigation water used you may force them entirely into wood. This condition would be apt to be true with many of our apples, in which case it may be years before they will bear. Yellow



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Newton, Northern Spy, King of Tompkins County, and in fact many of the apple varieties grown in and near Portland, it taken too good care and over-pruned, will not bear, at least not until they are quite old.

"The remedy is to let up on the pruning; to prune twice a year distributing the pruning between the early spring and the middle of June to the middle of July. Do not water them too much, and go sparingly on manure. Sometimes these trees are in chicken yards, where the ground has been kept quite moist and is pretty heavily fertilized. Trees under those conditions often do not succeed.

"With the cherry trees that bloom and fail to set, I am almost certain that the trouble is pollination. The Black Republican can be grafted into those trees and will help them to set, or you can use a special strain of Waterhouse, which can be secured from Eugene, which will help these trees to set a crop."

**ITEMS OF INTEREST  
IN PEORIA VICINITY**

Peoria, Or., Jan. 20.—(Special to Democrat.)—Mrs. Fred Frady returned last week from California, where she had been spending the past three

months for the benefit of her health. W. E. Githens is putting the finishing touches to his new house and as soon as it is finished it will be occupied by Frank Strong and family, formerly of Corvallis.

Mrs. Amos Taylor who has been very ill for the past two weeks, is rapidly recovering under the care of Dr. Johnson of Corvallis.

There are but two new cases of mumps this week, and it is hoped the disease has about run its course.

Percy Taylor and Will Muller are the latest "victims."

Peoria's high school boys met defeat at the hands of the Philomath basketball team Saturday night by the score of 11 to 23. Next Saturday night the Peoria Pirates will play the Halsey Roughnecks on the home floor. This game should be one of the best of the season as these teams are pretty evenly matched in size and in skill.

I. B. Rhodes left this morning for his home in Portland. He will stop off in Salem on the way.

Small close in tract with new 6-room bungalow, barn, etc., will take auto as part payment. See Bain. 19-21

# The Real Power---Money

POTENTATES AND PEASANTS, MILLIONAIRES AND MECHANICS, YOU, WE AND ALL OF US BOW BEFORE THE ALMIGHTY DOLLARS. WE HAVE A KEEN RESPECT FOR YOUR MONEY. WE RECOGNIZE OUR OBLIGATION TO GIVE YOU 100 CENTS WORTH OF SATISFACTORY MERCHANDISE FOR EVERY DOLLAR YOU SPEND IN OUR STORE.

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FROM SUITS TO SHIRTS, FROM HATS TO HOSE. WE HAVE MADE AN EMPHATIC REDUCTION.

## Men's Dress Hats

1st Lot assorted sizes and colors, values as high as \$3.00, sale ..... 65c  
2nd Lot soft hats all sizes and styles, large assortment, values \$1.50 to \$3.50, sale ..... \$1.15  
3rd Lot, high grade dress hats, values \$2.50 to \$4. Wonderful bargains, sale ..... \$1.85

## Men's Suits

\$10.00 to \$13.50 values, sale ..... \$7.85  
\$12.50 to \$16.50 values, sale ..... \$9.85  
\$15.00 to \$17.50 values, sale ..... \$11.85  
\$17.00 to \$20.00 values, sale ..... \$13.85  
\$20.00 to \$30.00 values, cream of the stock, for this special sale ..... \$16.85 to \$18.85

## Boys' Suits

3 Suits, sizes 9, 11, 12, sale ..... \$1.48  
Worsted and cassimeres, Norfolks and sack suits, \$1.95  
\$4.00 values ..... \$2.35  
\$4.00 Values, 2 pair pants ..... \$3.00  
\$5.00 to \$7.00 values, nice patterns, all wool-lined trousers, sale ..... \$3.45 to \$4.95

Men's 2-piece cotton underwear, 50c val, Sale, ... 37c  
Men's 50c work shirts, our regular stock, sale ..... 39c  
\$1.00 unionsuits slightly fleece lined, sale ..... 83c  
\$1.00 Unionsuits ribbed, sale ..... 73c

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Men's dress shirts, sale ..... 48c and 79c  
Boys' 50c overalls, sale ..... 35c  
50c Neckties, sale ..... 39c  
25c Neckties, sale ..... 19c