FARM AND ORCHARD

Notes and Instructions from Agricultural Colleges and Experiment Stations of Oregon and Washington, Specially Suitable to Pacific Coast Conditions

(Dy Professor H. V. Tartar, Oregon Agri-cultural College Experiment Station.)

country

Land plaster is now used in Western Oregon and Western Washington. especially in the Willamette Valley, as a fertilizer for leguminous crops. As evidence of its remarkable stimu As evidence of its remarkable stimu grown certain legumes, it was found lating action on the growth of legumes, many instances are recorded where the yield of a clover or vetch by live organisms of some sort.

vestigators. Physically, it is known is to quite an extent unknown, to exert a beneficial effect on heavy. Only legumes have the power to on certain compounds of ammonia converting them into more stable forms for the use of plants.

Many years ago, however, it was

observed in comparing analyses of clover grown on plots treated with plaster with those of the same plant served in comparing analyses grown on untreated plots, that the plastered clover contained more pot ash, one of the most essential ele-ments of plant food. A later investicator states: "It is found that the while a corresponding quantity of potash goes into solution." At the At the generally consid ered that the benefits of land plaster are due to its action in liberating potash from some of the more insoluble materials of the soil.

In connection with some soil stud-es a test has been made on a numof typical Oregon soils, including Willamette Valley clay loams, red hill soils of the foothills, and Eastern Oregon silt loams, as regards the liberation of soluble potash by land plaster. In every instance it has of time.

haustible supply of potash and if it can be rendered more available any injurious products in the soil, it tion. would seem no objection can be date raised to its use. One particular field, a sandy loam used for truck gardening, has come to our notice which has had applications of land plaster for 25 years at the rate of 200 pounds per acre and still responds readily to this treatment.

SOIL INCCULATION WITH

Experiments at Oregon Agricultural College to Demonstrate Its Value to Leguminous Crops.

(By Dr. E. G. Peterson, Bacteriologist, Oregon Agricultural College.)

The Department of Soil Bacteriology at the Oregon Agricultural Col- show little more consideration for has in process a series of in vestigations, in the inoculation of soil with bacteria, which it is hoped, from results so far attained, will clear up some of the mystery which now surrounds this vital problem of soil fertility. Experiments to date very strongly indicate that the presence of the right variety of organisms affects until he needs them. Some of the litthe crop very markedly in two ways: general quantity and luxuriance of the growth, and in the quality of growth. The point often over-looked but which in reality is most significant is the qualitative variation caused by the bacteria of the soil. This qualitative variation is expressed usually in a marked rise in the perof nitrogen present in the plant tissue as a result of the pres-ence of artificially introduced soil bacteria.

in the investigation of the subject and cover the peg every time. was that leguminous crops were char-The first fact of importance noted acterized by having on their roots and Ananias, with a smile, "but my varying in size from a probead to a at blowing smoke rings. One day a pea. It was further noted that the cyclone came along and blew out his general health and luxuriance of the keyhole in the front door, but greatplant was in direct proportion to the grandfather just lit his pipe, blew a abundance of these nodules. Very smoke ring and made a new one." poorly growing crops were found to be deficient in root nodules, moder-ately successful crops were found to contain an average number of nodules, while very healthy growths occurred only in association with numerous

This coincidence led to an investigations of the nature of the nodule or tubercle. It was at first thought to them up soft and feed a ration now be of the nature of a disease, but and then.

LAND PLASTER AND ITS EFFECT this was soon seen to be erroneous ON THE SOIL. because of the fact already stated. because of the fact already stated. i. e., the coincidence of tubercles and health of the crop. The rise of bacteriology as a science near the mid-Land plaster, or gypsum, is a naddle of the last century gave impulse tive sulphate of lime. It is a well-known crop stimulant, yet it contains neither nitrogen, phosphorus, nor potassium, the usual plant foods supplied in commercial fertilizers. In plied in commercial fertilizers. In was, as a result of this investigation, some localities it is used to a considerable extent. According to the estimates of Dr. H. W. Wiley, of the United States Department of Agricul thre, about 80,000 tons of ground land terials for plant growth except nitro-plaster is used annually in this gen, it was found that if the soil not allowed to become contaminated the legumes failed to grow beyond a certain point. If the same soil were later contaminated or mixed with earth from a field which had

crop has been practically doubled by If one of the nodules from the root a treatment with plaster at the rate of a legume is cut open and the conof 50 to 60 pounds per acre. This tents examined by the aid of a pow-fertilizer has also been used with suc- erful microscope it will be discovered cess by a number of market gardeners to contain millions of bacteria. It is on general truck crops.

The reactions that take place in tract from the air the nitrogen which the soil when land plaster is applied they build or help to build up into have been studied by numerous in plant tissue. Exactly how they do it

clays by flocculation, though in this utilize atmospheric nitrogen and these notion it is far surpassed by lime. It only by the co-operation of bacteria, has also been considered that land plaster has the power to neutralize soil acids, but experiments made in the laboratory have indicated that it doubtedly. The chemical reaction of the soil very materially affects the hence cannot be used as a substitute for lime in this regard. Originally benefits derived from applications soil which is acid should be limed were attributed to its "fixing" action before a crop of this nature is grown.

Soil which has never grown legumes before or which has not grown profitably be inoculated with legums smothered there, bacteria as a preparation for growing the crop. This inoculation may be Washington, accomplished in one of two ways: either by scattering soil from a leg-sage urging early action on the recipuminous field to the field to be rocity agreement with Canada. He seeded, or by using a "pure culture" said that he sent this message in deof the bacterium. This "pure culture" is simply a growth of the
bacteria on media or food of some
kind. The culture is sent out in

"To the Senate and House of Reprebacteria on media or food of some kind. The culture is sent out in bottles which are tightly corked to prevent entrance of any other or ganism, and are to be used if possible within 20 days of their receipt. Bacteria do not diffuse light and soil bacteria do not diffuse light and soil bacteria do not canada. diffuse light and soil bacteria do not Canada. thrive at a very warm temperature.

Consequently these cultures should not be exposed to light or high temperature for any considerable period of both governments to effect a trade perature for any considerable period of time. Direct sunlight will kill them if continued for a sufficient period

The details in the application of the acts as an indirect potash fertilizer. This fact, together with the fact that plaster encourages the growth of certain nitrifying organisms in the soil which are beneficial to plant growth, probably explains its beneficial action on Oregon soils.

In some localities in the United States where plaster has been used for a long period of years it has been dealined that the soil does not respond to its application as readily as formerly. In other words, the supply of plant food material libe-ated by the action of the land plaster applicants to become depleted. Analyses indicate that our Western Oregon clay loams contain an almost inext haustible supply of potash and if it potash from these soils and hence pure culture to the seed are as fol-acts as an indirect potash fertilizer, lows: The seed (sixty pounds or less "The agrees

Usually a small plat should be re through moderate applications of land plaster without the accumulation of The results of experiments to diately indicate that this method is of the date indicate that this method is practicable and of great benefit under the conditions stated. It is the intention of the Department of Bacteriology of the Oregon Experiment Station to send out these cultures. A set of instructions will accompany each shipment and those who take advantage of the opportunity will be asked to report the results of their work.

of the careful labors of the commissioners met with widespread approval. This approval has been strengthened by further consideration of the terms of the agreement in all their particulars. The volume of support which has developed shows that its broad national scope is fully appreciated and is responsive to the popular will.

"The House of Representatives of the first Congress, after the full text of the arrangement, with all the details in regard to the different pro-

Raises Young to Eat.

The paradise fish, one of the new wonders of natural history, raises its young to eat. The habits of this pecuitar fish are also strikingly similar to those of a great many parents who their offspring. The female drops her eggs carelessly anywhere she may be and the male gathers them up and places them in a bubble nest, which he blows, and awaits the hatching When they are sufficiently grown he eats them, keeping them housed up tle ones escape, of course, and as they are prolific breeders, the specie is perpetuated.

Subjects for Big Stick.

"My great-grandfather was clever at alowing rings of smoke," began the first Ananias, as he helped himself to the crackers in the corner grocery. "Horseshoes were scarce in those days, so when he wanted to play a game of quoits he would blow rings of smoke

"Very clever, indeed," said the secwhat are called tubercles or nodules great-grandfather was also an artist

> Young Pullets.
>
> The April hatched pullets should now be laying. They certainly are if they have been given the proper feed

and care. If you have any little potatoes the

BRIEF REPORT OF THE DAILY WORK OF NATION'S LAWMAKERS

introduced a resolution in the senate for a new investigation of the Lorimer were matters of conjecture here. bribery charges.

It is contrary to precedent to reopen tee.

La Follette proposed that the committee be composed of Works, of Cal-ifornia; Townsend, of Michigan; Mc-the coming presidential fight hovered regular. It is understood they were senate in the next few months. selected at an insurgent conference.

which had elected him, was defeated, would have been complete. The resolution recites:

"It appears from the published recharges, have appeared before the said sive factions were missed. committe of the Illinois state senate President Taft's message, dealing and on being interrogated, have given with Canadian reciprocity, will be read

refer the resolution to the committee legislation. They declare they are on privileges and elections, of which not alarmed at the threat of the Demlegumes for three or more years may man, in the hope that it will be action is secured on tariff bills.

Washington, April 5. — President Taft transmitted to congress a mes-

arrangement which, supplementing as it did, the amicable settlement of various questions of a diplomatic and political character that had been reached would mutually promote commerce and would strengthen the friendly relations

purpose and the scope, became known to the people through the message transmitted to Congress, it was immediately apparent that the ripened truits of the careful labors of the same that the ripened truits of the careful labors of the same truits of th careful labors of t

tails in regard to the different pro-visions, had been laid before it, as they before the American passed a bill confirming the agreement as negotiated and as transmitted to

"This measure failed of action in the Senate. In my transmitting message of January 26 I fully set forth the character of agreement and emphasized

ton and Ottawa

"I have felt it my duty, therefore not to acquiesce in relegation of action until the opening of the Congress in December but to use my constitutional prerogative and convoke the 62d Conmost important subject."

Washington, April 4.- The Sixty-

Williams, the new junior senator from lar session.

Mississippi, has succeeded in a life-time ambition. He has the seat in the senate which was occupied by Jefdiscernible.

Washington, April 6. — Violating second congress met in extraordinary seems precedents, LaFollette today session today. What the session will bring forth, or when it will adjourn,

The Democrats took possession of a case of this kind once decided. It the house and put Champ Clark in the is also contrary to precedent to speaker's chair. In his speech ac-name the members of the investigat- cepting the honor he warned the Deming committee on the resolution ap- ocratic members that the eyes of the pointing it. It is a further violation country were upon them; that the of precedent to appoint only new mem- party was on trial, and that it had an bers of the senate on such a commit-opportunity for the first time in 16 years to prove its worthiness for a still higher exression of confidence.

Lean, of Connecticut; Kern, of In-diana, and Pomerene, of Ohio. Of these the first two are insurgents, the last two Democrats and McLean is a part in the affairs of the house and

William J. Bryan, of Nebraska, and The resolution recites the action of Governor Harmon, of Ohio, were leadthe senate last session, when a resolu- ing figures on the floor of the house tion to declare the seat of Senator Had Governor Woodrow Wilson been Lorimer vacant because of alleged present, the list of generally accepted corruption of the Illinois legislature Democratic presidential possibilities

The senate's opening was sedate a usual. And while the leadership of ports of the proceedings of the said the upper branch remains in Republi-Illinois state senate committee, that can hands, the change in the personwitnesses who were not called and nel was almost as marked as in the sworn by the committee of this sen- house. Aldrich, Hale, Beveridge and ate appointed to investigate said others of both the regular and progres-

for the Lorimer senators will move to have announced there shall be no tariff Dillingham, a Lorimer man, is chair- ocrats to hold back reciprocity until difference promises soon to bring the two branches into conflict. A legisla-tive deadlock is predicted, and the length of the session seems to depend on how long the Democratic house will bombard the Republican senate with general legislation bills.

From a political standpoint it is likely that one of the most importing to the people will result.

The house session was devoted to the work of organization. The adoption of the new rules was put over until tomorrow. The Republicans will make their first fight on these. resent the action of the Democrats in increasing the membership committees without increasing the percentage of minority representation.

The Republican insurgents in the ouse indicated their purpose to act independently by declining to vote for Mann for speaker, and by giving their support to Cooper of Wisconsin.

The insurgents gained a member when Aikin of New York, elected as an "independent Democrat" and heretofore carried on the Democratic rolls, cast his lot with them and chose s seat on the Republican side.

Berger of Wisconsin, the only So cialist in the house, voted "present' in the speakership balloting. He also chose a seat on the Republican side.

The drawing for seats attracted interest. Because of their large majormittee chairmen, while four others are since they swept tee on ways and means and committee on committees.

When the Republicans found it necessary to invade the Democratic side, their section was known as the Cherokee strip. Burleson, of Texas, today christened the Democratic section on the Republican side as the "Panhandle.

STEEL TRUST BID LOWEST.

Corporation Gets Contract for Building Six Panama Emergency Dams.

Washington - The United States

character of agreement and emphasized its appropriateness and necessity as a response to the mutual needs of the people of the two countries, as well as its common advantages. I now lay that message and the reciprocity trade agreement as part of the present message before the \$12 Congress, and again invite earnest attention to the consideration therein expressed.

"I am constrained, in deference to popular sentiment and with a realizing sense of my duty to the great mass of our people, whose welfare is involved, to urge on your consideration to rearry action on this agreement.

"In concluding the negotiations, the representatives of the two countries bound themselves to use their utmost efforts to bring about the tariff changes provided for in the agreement by concurrent legislation at Washington and Ottawa.

"I have felt it my duty, therefore.

Taft Defers Tariff Board Bill.

Washington-President Taft has decided to concentrate his attention upon reciprocity with Canada, and it was gress in extra session in order that there shall be no break of continuity in considering and acting upon this commission at the special session of commission at the special session of

He told callers he had come to the conclusion that the proper time to ask Williams Gets Ambition. eongress for a permanent tariff board would be at the beginning of a regu-

Initiative Decision to Be Published. Washington-Senator Brown of Neferson Davis, the president of the Confederacy. The desk still bears the bayonet marks made by the Union cision of the Supreme court of Oregon soldiers during war times in an effort in the case of Frank Kiernan against to destroy it. The bayonet stabs the City of Portland, involving the legality of the Oregon initiative and referendum act.

WAR WOULD BE FOLLY.

For Japan to Attack United States Would Be Suicide.

San Francisco-In an address before the Commonwealth club, Baron de Estournalles de Constant, the distinguished French scholar who has been advocating the cause of international conciliation during an extended tour of this country, declared that "war with Japan would be not only a crime, but folly, with no end, no result, except revolution and ruin."

The text of his address was "War or Peace With Japan. "

"Let us suppose," he said, "that the United States, following an unand are victorious; this victory would be of no use. Japan would remain inaccessible and even stronger than before, standing upon her rights against an unjust aggression. She would be United States. Then he was received supported by the national feeling of her people and the exalted solidarity and enthusiasm. of Asia; no civilized nation could abstain from approving her resistance.

"But, supposing now the reverse, and in a moment of complete folly that Japan attacked the United States. This attack would be, for Japan, a suicide.

"Let us suppose, with the most pessimistic alarmist, that Japan, starting a policy of imperialism and megalomania, would try to monopolize the Pacific ocean, claiming Asia for the Asiatic. It would be the beginning of her decadence and the end of her

"Acting against the United States, taking by surprise or by force the Philippines, the Hawaiian islands, she would open, at the same time the era of a general revendication against ulace calling one by his first name un-Europe. She could not stop; she restrainedly is significant in itself. She could not stop; she would threaten Great Britain, Sigapore as well as Shanghai, France, Saigon, as well as Hanoi, Germany, Netherlands, Russia, Australia, toothat is to say, all the world. It is very much to do for one nation.

"And where would she find money for experimenting in the Pacific this Napoleonic policy of a universal blockade? And what would become of her industry, of her agriculture, of her commerce, of her art, of her eco-nomic leadership in China? It would be the miserable collapse and not the triumph of Japanese imperialism.

'Let us stop this alarmist nonsense and these pessimistic appeals to new expenses for armaments and to empty

glory.
"The empire of the sea exists no more; the Pacific ocean will belong to all, as well as the sky belongs to aviation and not to one nation only.

"Let us be confident in the wisdom of the Japanese people and of the Jap-anese government."

SOCIALIST IS LOSER.

Non-Partisan Is Elected Circuit Judge in Milwaukee. Milwaukee, Wis. - The Socialist-

Democratic party in Milwaukee city and county was defeated in Tuesday's judicial and school board election.

Incomplete returns from the city show that Circuit Judge Halsey, nonpartisan, who was opposed by John Kleist, Social-Democrat, has been elected by a purality estimated at 10,- it as a special event in his travels. 000 votes.

of the Socialists' power in Milwaukee Commercial club. Here the large everything in members of the all-powerful commit- city a year ago and carried several assembly districts and selected a representative in congress last fall.

Women were permitted to vote for school directors only and were handed separate ballots upon which to mark their selections. It is estimated that fully 5,000 women voted.

In several towns outside of Milwaukee Socialists were successful. They captured two aldermanic positions and two county supervisors in Superior and one alderman and a justice of the peace in Racine.

Wausau and Beloit went "wet." Fond du Lac and Janesville elected Democratic mayors and Oskosh elected a Republican.

Roslyn Miners Resume.

district in Central Washington, have resumed work, but the men formerly employed by the Northwestern Improvement company are still out and demand a closed shop. Hearing that the workers in the independent mines were to resume work, several hundred miners marched from Roslyn to Jonesville to force the independent employes to reconsider their action. A show of force by the deputies was sufficient to quiet the strikers.

Woman Is Mayor of Hunnewell,

Hunnewell, Kan.,-Mrs. Eliza Wilson was elected mayor of Hunnewell at an election held here Tuesday. She was opposed by O. M. Akers, former postmaster. Mrs. George Osborn, candidate for police judge, ran close to Mrs. Wilson, but was defeated in the final count by only four votes.

The women of the town are cele-brating their victory. Mrs. Wilson declares there will be many reforms during her administration.

Oregon Plan Rejected.

instructing the legislature as to popular choice for United States senators. duty free. The treaty will remain in

EX-PRESIDENT IS OREGON'S GUEST

Streets of Portland Thronged With Enthusiastic Visitors.

Distinguished American Greeted With Affectionate Familiarity By Waiting Thousands.

Portland, April 6 .- No such greeting has Portland ever given any infortunate inspiration, attack Japan dividual as that which was extended by the populace to Theodore Roosevelt vesterday.

> Once before Portland welcomed him when he came here as president of the with all due pomp, ceremony, dignity

> But there was a delightful informality, a spontaniety, about the Roosevelt reception yesterday that leaves the occasion altogether unique and without

> Portland, for the most part, took an afternoon and evening off and joined in a series of informal demonstrations which must have served to make it clear to Colonel Roosevelt that he is held in high regard by everybody here-abouts. It was not the mere cheering and applause that revealed the public mind and heart, but the evidences of intimate regard that were manifested on every hand.

It was "Hello, Teddy" and "Hurrah for Teddy" everywhere along the crowded streets where he appeared. None thought of shouting "Hurrah for Roosevelt." And to have the pop-

"Teddy in 1912!" shouted hundreds of his admirers, as he was taken through the crowded streets in a big automobile, attended by members of the reception committee.

To this significant exclamation he gave no fuller acknowledgment than to the other greetings that came from the crowds. There was a nod and a baring of teeth in that irresistible Roosevelt smile for everyone. only ones who received especial attention were women with children, veterans of the Civil or Spanish-Ameri-can wars and groups of workingmen outdoors for a few moments from their toil to see him pass.

It was a strenuous day-not arduous, or fatigueing, or wearing, or vigorous—but strenuous. The overworked Roosevelt adjective alone applies. Into the nine hours that he spent in Portland there was crowded event upon event with but little inter-

val for rest. The hour and a half of respite from public demonstrations that the committee provided was spent not in rest, but in attending to private matters. Seemingly that famed reservoir of reserve energy is as remote from diminution as ever.

Exacting as were the demands made upon his time, the genial colonel enjoyed it all immensely. He said as much before leaving the city late last night and his manner was more expressive than his words. In at least one event he was presented with a feature altogether new in his experience, and he said he will always remember

It was the jungle dinner given early The election was the first real test in the evening in his bonor at the the banquet hall was made over into the replica of an African jungle.

It was intensely realistic, with an array of grinning Africans in jungletown full dress, monkeys climbing about in the rank jungle foliage, lions roaring, hunting horns sounding and all the atmosphere of a Roosevelt hunting camp in the land of the rhinoceri

"It is the first time in my experience that I have been provided with real entertainment rather than being left to furnish the entertainment myself," the colonel said delightedly.

Oyster Bay Goes Democratic.

New York-Following up their victory of last fall, when Martin W. Lit-tleton, Democrat, defeated for con-gress W. W. Cocks, Republican, the Spokane-The independent mines at Democrats in Nassau county, Long Is-Jonesville, in the Roslyn coal mining land, the home of Theodore Roosevelt, were successful in two of three biennial township elections. In North Hempstead the Democratic ticket rolled up a plurality of about 3,300. and in Oyster Bay township it was about 165. In Hempstead the Republicans apparently have won by a narrow margin of about 50 votes.

> Levee Breaks; Grain Destroyed. Colusa, Cal.-The levee of reclama-

tion district No. 108, south of Colusa, broke near the Yolo county line and the district is filling with water from the Colusa Basin. A heavy wind caused waves which battered away the embankment. Twenty-five thousand acres of growing grain that would have made a heavy yield will be ruined. Probably not more than 1,000 acres will remain out of water. Dredgers are trying to stop the flood.

Japan Cuts Duties for Britain.

London-The new Anglo-Japanese commercial trreaty which was ratified at Tokio provides for large reductions in the rates of the new Japanese Concord, N. H.—The state senate tariff on the chief British textile and Tuesday killed by a vote of 12 to 10 metal imports in Japan. Specialities the bill which recently passed the in Japanese manufacture will continue house, adopting the Oregon plan for to be admitted to the United Kingdom