

COUNTRY IS COMING TO NEW YORK CITY

Metropolis of America to Hold Its First Annual "Land Show" Next November --- Exhibit Products of Nation

(Special Correspondence.)
For the first time in the history of the metropolis of America is to have a "land show" and no great exhibition for 1911 will be of greater interest to the Atlantic seaboard or of more importance to the entire country than the American Land and Irrigation Exposition to be held in New York City November 3 to 12.

Seven millions of people living on and near Manhattan Island are to have their first opportunity to witness an exhibit of the products and resources of the soil. Incredible as it may seem to the rural dweller, there are hundreds of thousands of citizens of New York and adjacent territory who know absolutely nothing of the agricultural resources of the state that support them and of the opportunities for making a comfortable and independent livelihood from the soil. Here is the germ of entry for a million immigrants yearly, a large percentage of whom are seeking land there in and has been an exhibit of the agricultural wealth and possibilities

Iowa State University, Benjamin Lee Wheeler, president of the University of California, and the presidents of the agricultural colleges of Mississippi, South Carolina, Kansas, Utah and Iowa.

James J. Hill of the Great North Sea, Sir Thomas Shaughnessy of the Canadian Pacific, Howard Elliott of the Burlington and President Harding of the Chicago, Milwaukee and St. Paul were quick to approve of the exhibition by donating valuable prizes and making exhibition space in Madison Square Garden for their ready. These men appreciate the opportunity offered by the exposition for exhibiting the productivity of the soil and their lines in the center of millions of men and millions of money.

Gilbert McClurg, general manager of the exposition, with offices in the Binger building, 135 Broadway, New York City, is now in correspondence with soil and crop experts and exhibitors all over the country. Secretary Wilson of the United States Department of Agriculture has agreed

largest and best land show in point of attendance ever held in America. No land show ever held in the world will have been given in the center of so many millions of people. More than half the entire population of the nation is within a night's or a day's ride of New York City, and to these the exposition of the productivity and riches of the American soil will make direct appeal.

A compelling magnet will be the giving away daily to visitors by popular appointment of a farm, orchard, irrigated grain tract or grain land in various parts of the United States. Free gifts of this kind have never been offered in New York or the East, and this will prove a great attraction.

Among the prize offerings are 150 acres of grain land in Montana, donated by President Elliott of the Northern Pacific Railway; ten acres of irrigated land near Roswell, New Mexico, given by the Western Irrigated Land and Orchard Company, of New York, and a fine five-acre pecan orchard at

FARM AND ORCHARD

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

LAND PLASTER AND ITS EFFECT ON THE SOIL.

(By Professor H. V. Tartar, Oregon Agricultural College, Experiment Station.)

Land plaster, or gypsum, is a native 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 some localities it is used to a considerable extent. According to the estimates of Dr. H. W. Wiley, of the United States Department of Agriculture, about 80,000 tons of ground land plaster is used annually in this 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 stimulating action on the growth of legumes, many instances are recorded where the yield of a clover or vetch crop has been practically doubled by a treatment with plaster at the rate of 50 to 60 pounds per acre. This fertilizer has also been used with success by a number of market gardeners on general truck crops.

The reactions that take place in the soil when land plaster is applied have been studied by numerous investigators. Physically, it is known to exert a beneficial effect on heavy soils by flocculation, though in this action it is far surpassed by lime. It has also been considered that land plaster has the power to neutralize soil acids, but experiments made in the laboratory have indicated that it does not have such an effect and hence cannot be used as a substitute for lime in this regard. Originally benefits derived from applications were attributed to its "fixing" action 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 grown on untreated plots, that the plastered clover contained more potash, one of the most essential elements of plant food. A later investigator states: "It is found that the lime of the plaster is fixed in the soil while a corresponding quantity of potash goes into solution." At the present time it is generally considered 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 studies a test has been made on a number of 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 been found that the plaster releases potash from these soils and hence 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 claimed that the soil does not respond to its application as readily as formerly. In other words, the supply of plant food material liberated by the action of the land plaster appears to become depleted. Analyses indicate that our Western Oregon clay loams contain an almost inexhaustible supply of potash and if it can be rendered more available through moderate applications of land plaster without the accumulation of any injurious products in the soil, it would seem no objection can be 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 INOCULATION WITH BACTERIA.

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 College has in process a series of investigations, 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 the crop very markedly in two ways: in the general quantity and luxuriance of the growth, and in the quality of growth. The point often overlooked 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 percentage of nitrogen present in the plant tissue as a result of the presence of artificially introduced soil bacteria.

The first fact of importance noted in the investigation of the subject was that leguminous crops were characterized by having on their roots what are called tubercles or nodules varying in size from a pin-head to a pea. It was further noted that the general health and luxuriance of the plant was in direct proportion to the abundance of these nodules. Very poorly growing crops were found to be deficient in root nodules, moderately successful crops were found to contain an average number of nodules, while very healthy growths occurred only in association with numerous nodules.

This coincidence led to an investigation of the nature of the nodule or tubercle. It was at first thought to be of the nature of a disease, but

this was soon seen to be erroneous 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 middle of the last century gave impetus to the investigation of soil processes from the standpoint of bacteria. It was, as a result of this investigation, found that the nodules were the result of bacterial action. In soil which is rendered sterile by excessive heating or by the application of antiseptics, but which contains all the food materials for plant growth except nitrogen, it was found that if the soil were 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 grown certain legumes, it was found that growth was luxuriant. This suggested that the process was caused by live organisms of some sort.

If one of the nodules from the root of a legume is cut open and the contents examined by the aid of a powerful microscope it will be discovered to contain millions of bacteria. It is now known that these bacteria extract from the air the nitrogen which they build or help to build up into plant tissue. Exactly how they do it is to quite an extent unknown.

Only legumes have the power to utilize atmospheric nitrogen and these only by the co-operation of bacteria. Each legume is thought to have a special kind of bacterium, although they are all very closely related, undoubtedly. The chemical reaction of the soil very materially affects the action of the organisms. They will not thrive in acid soil. Consequently soil which is acid should be limed before a crop of this nature is grown.

Soil which has never grown legumes before or which has not grown legumes for three or more years may profitably be inoculated with legume bacteria as a preparation for growing the crop. This inoculation may be accomplished in one of two ways: either by scattering soil from a leguminous field to the field to be seeded, or by using a "pure culture" of 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 bottles which are tightly corked to prevent entrance of any other organism, and are to be used if possible within 20 days of their receipt. Bacteria do not grow well in bright or diffuse light and soil bacteria do not thrive at a very warm temperature. Consequently these cultures should not be exposed to light or high temperature for any considerable period of time. Direct sunlight will kill them if continued for a sufficient period of time.

The details in the application of the pure culture to the seed are as follows: The seed (sixty pounds or less for each bottle of culture) should be soaked in water for two hours. The water should be drained off and a pound of granulated sugar per bushel of seed should be added. Allow this to stand for ten hours or more. A small quantity of cold water should be added to the culture bottle and shaken vigorously until the culture is well broken up. The contents of the bottle should next be mixed thoroughly with the seed. This step is especially important. Plant the seed as soon as it is dry enough to handle. Do not allow the seeds to become thoroughly dry or the bacteria will die.

Usually a small plat should be reserved for uninoculated seed in order to test the efficiency of the inoculation. The results of experiments to 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.

Raises Young to Eat.

The paradise fish, one of the new wonders of natural history, raises its young to eat. The habits of this peculiar fish are also strikingly similar to those of a great many parents who show little more consideration for 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 until he needs them. Some of the little ones escape, of course, and as they are prolific breeders, the species is perpetuated.

Subjects for Big Stick.

"My great-grandfather was clever at blowing rings of smoke," began the first Ananias, as he helped himself to the crackers in the corner grocery. "Horsehoes were scarce in those days, so when he wanted to play a game of quoits he would blow rings of smoke and cover the peg every time." "Very clever, indeed," said the second Ananias, with a smile, "but my great-grandfather was also an artist at blowing smoke rings. One day a cyclone came along and blew out his keyhole in the front door, but great-grandfather just lit his pipe, blew a smoke ring and made a new one."

Young Pullet.

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 hens can make good use of them. Boil them up soft and feed a ration now and then.

Wear This Stylish Suit!



American Woolen Mills Co., Dept. 512, Chicago

Babies Chew Tobacco.
Eskimo babies, it is alleged, are seldom weaned before the fourth or fifth year, but are taught to chew tobacco and to swallow the juice even as early as the ninth month. The customs—general with both sexes—of inhaling tobacco smoke and swallowing tobacco juice seem to be of no recent growth. No evil results of either practice seem to be apparent.—Medical Times

FREE ADVICE TO WOMEN

Women suffering from any form of illness are invited to promptly communicate with Mrs. Pinkham at Lynn, Mass. All letters are received, opened, read and answered by women. A woman can freely talk of her private illness to a woman; thus has been established this confidence between Mrs. Pinkham and the women of America which has never been broken. Never has she published a testimonial or used a letter without the written consent of the writer, and never has the Company allowed these confidential letters to get out of their possession, as the hundreds of thousands of them in their files will attest.

Out of the vast volume of experience which Mrs. Pinkham has to draw from, it is more than possible that she has gained the very knowledge needed in your case. She asks nothing in return except your good will, and her advice has helped thousands. Surely any woman, rich or poor, should be glad to take advantage of this generous offer of assistance. Address Mrs. Pinkham, care of Lydia E. Pinkham Medicine Co., Lynn, Mass.

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Keeley ALCOHOL OPIUM—TOBACCO Cure PORTLAND OREGON

To Purify Water.
To purify water sprinkle a table-spoonful of pulverized alum into a glass of water (the water to be stirred at the same time). It will after a few hours, by precipitating to the bottom the impure particles, so purify the water that it will be found to possess nearly all the freshness and clearness of spring water. A full pint containing four gallons may be purified by a teaspoonful of alum.—National Geographic

Hamilton's Genius.
Men give me credit for genius. All the genius I have lies just in this—When I have a subject in hand, I study it profoundly. Day and night it is before me. I explore it in all its bearings. My mind becomes pervaded with it. Then the effort which I make, the people are pleased to call it the fruit of genius. It is the fruit of labor and thought.—Alexander Hamilton.

Of Course.
A man in a near-by town fell down the cellar steps the other day with a barrel of apples on top of him. He broke his left leg, his right arm, two ribs, his nose, one finger, cut his scalp, sprained his ankle and put his shoulder out of joint. But he didn't groan or cuss until his wife inquired if it "hurt him." Then he did both.



These beautiful silver trophies stand more than two feet high and are valued at over \$1,000 each. To be awarded for best exhibits in these cereals at the American Land and Irrigation exposition, New York, Nov. 3 to 12.

tion of the nation to stimulate a stronger tie of labor and of capital toward the undeveloped land.

When this fact was brought to the attention of Arthur E. Silwell, president of the Kansas City, Mexico and Orient Railway and of the United States and Mexican Trust Company, in his office in the Binger tower he quickly realized that a "land show" in New York City would be eagerly welcomed by hundreds of thousands of its citizens anxious to learn the agricultural resources of our country, and to secure some knowledge of the opportunities to be found in tilling the soil.

Mr. Silwell at once authorized his Interoceanic, Mr. Gilbert McClurg, who had directed the national irrigation congress in Colorado and Utah, to organize the American Land and Irrigation Exposition, to lease the Madison Square Garden and to hold New York's first land show there in November of the present year.

The first New York land exposition is to be thoroughly representative of American agriculture as well as the most picturesque and instructive call of the land ever presented in the nation. Exhibitors will display their soil and its products or show maps and relief models of their holdings. Agriculture as it is generally practiced, dry farming and irrigation methods will be demonstrated. Moving pictures, illustrated lectures, literature, growers and agents will demonstrate the possibilities of American soils. In fact, the exposition will perfectly illustrate that from the land comes all permanent wealth and that life on the land affords the greatest measure of independence.

Big Men Encourage Agriculture.
President Silwell has secured for the exposition a thoroughly representative advisory and governing board. It is made up of the presidents of twelve of the great railway systems of the country, United States Senators and Congressmen, thirty governors of the Union, and well known agriculturists, educators and bankers. Among them are President McCrea of the Pennsylvania Railroad, President Brown of the New York Central, President Miller of the Burlington, General Manager E. Dickinson of the Orient, United States Senators Francis E. Warren, Clarence D. Clark and Reed Smoot, ex-Governor Gillette of California, Governor Shafroth of Colorado, Governor Deneen of Illinois, Governor Carroll of Iowa, Governor Hadley of Missouri, Governor Foss of Massachusetts and the executives of other states, Cyrus Northrup, president of the University of Minnesota, George E. McLean, president of the

that his department shall send an educational exhibit to the exposition, and Canada's agriculture and horticulture will be well represented. Mexico also is planning to make an exhibit of its agricultural products. Exhibits will be made by farmers and orchardists, by a majority of the states, by leading railroads, by boards of trade and by chambers of commerce.

Valuable Prizes.
The prizes to be awarded to exhibitors at this exposition constitute a galaxy of the handsomest trophies ever contested for in the history of American agriculture and are attracting the attention of crop experts in every state.

For the best one hundred pounds of wheat grown in the United States and shown at this exposition a prize cup valued at \$1000 has been donated by Mr. James J. Hill of the Great Northern Railway.

For the best one hundred pounds of hard red spring or winter wheat grown anywhere in the two Americas and shown at this exposition \$1000 in gold has been donated by the International Harvester Company.

For the best thirty ears of corn grown in the United States a prize cup valued at \$1000 has been donated by the International Harvester Company.

For the best sugar beets produced in the United States Mr. Horace Havemeyer has donated a magnificent cup valued at \$1000.

For the best twenty-five boxes of apples of any variety or varieties grown anywhere in the world Mr. Howard Elliott, president of the Northern Pacific, has donated \$500 in gold.

For the best barley grown in the United States a cup valued at \$1500 has been donated by Colonel Gustav Pabst, of Milwaukee, who will purchase at fancy price the entire barley crop from the farmer winning the prize.

For the best hops grown in the United States a cup valued at \$1000 has been donated by Mr. Adolphus Busch of St. Louis.

For the best oats grown anywhere in the United States a cup valued at \$1000 has been donated by President A. J. Earling of the Chicago, Milwaukee and St. Paul Railway.

For the best potatoes grown anywhere in the North America President Silwell offers a \$1000 prize cup. Negotiations are being carried on by Manager McClurg for similar handsome prizes for the best alfalfa, rice and other products of the field and orchard.

It is expected that this will be the

Tallahassee, Fla., donated by President Silwell of the Florida Pecan Endowment Company.

The American Land and Irrigation Exposition will be attuned to voice the cry of "back to the soil—the land—the home!" It will give illustrated information to the home seeker, the farmer, the railroad man, the inventor, the student and to town and city dwellers regarding the development and colonization of the beckoning lands of the Middle and Far West, the Pacific Slope and the South.

It will put the man on the place, it will show the tillers of the soil and land how to rejuvenate their farms or where best to seek and find rich, virgin soil, it will turn tired city folk, over to green fields and the song of the thrush. It will point the way for the immigrant and direct "the landless man to the manless land."

TERMS OF AWARD FOR WHEAT TROPHY.

Much interest has already been aroused in Canada by the announcement made by the Canadian Pacific Railway that Sir Thomas G. Shaughnessy, its president, has offered \$1000 in gold for the best hundred pounds of hard red spring or winter wheat grown anywhere in the two Americas.

"For Canada to win this prize of \$1000 in gold," writes Mr. J. S. Dennis, president of the Canadian Pacific Irrigation Colonization Company, "will mean that we are still mistress of wheat; it will mean honor and glory to the farmer individually and \$1000 in his pocket. It will mean that both Canada and the farmer who carries off the coveted prize will receive such advertising as would be hard to secure in any other way. The particular district where the wheat is grown, and the man who produced it will become famous. Land values in his district will increase as a consequence, and, to sum up, the winning of this prize will induce settlement all over the Dominion. Canada cannot afford to lose."

Mr. James J. Hill's prize cup for the best bushel of wheat grown in the United States in 1911 can be won by the exhibitor whose grain gives the largest yield per acre, has the best general appearance and weight and is truest to variety and type.

Mr. Hill requires further that the wheat placed in competition for his cup must be exhibited by the actual grower. The grower must be prepared to make affidavit as to the method of preparation of the land for the wheat, crops grown on the land for three years previous, date and method of sowing, amount of seed used and the date of harvesting.