

One Dollar and a Half a Year.

BAMBERG, S. C., THURSDAY, OCTOBER 25, 1917.

Established 1891.

**Fertilizer Situation in The U. S.**

In view of the present urgent need for the conservation of food and a greater crop production, a publication just issued by the United States National Museum on "Fertilizers—An Interpretation of the Situation in the United States," by Joseph E. Pogue, is most timely. The author points out clearly and in a manner easily understandable by the reader without technical knowledge of fertilizers, what raw materials are available in this country and how they may best be recovered and manufactured, and he shows definitely what attitude should be adopted by the government towards the new fertilizer industries growing out of conditions caused by the war. Dr. Pogue explains in a general way the theories of soil formation and of plant growth, and shows that under prolonged cultivation without the addition of fertilizers the soil is exhausted in respect to three of its most important plant foods—phosphorus, nitrogen and potassium. He then considers each of these elements in turn, describing the sources, available amounts and ways of increasing the output of each, and concludes by pointing out that the best progress in the fertilizer field will come through enlightened cooperation between the fertilizer industries, the government and the consumers.

The soil does two things: It forms a mechanical medium for supporting and protecting the growing plant, and it supplies the plant with some of the chemical materials to be built into its structure. In the normal course of events, plants spring up, live their course, and die, giving back to the soil the elements employed in their life cycle. But where plants are removed artificially the balance is destroyed and unless the necessary chemical elements are returned to the soil in some form, it is soon rendered unfit for further cultivation. By long experience it has been learned that those elements of which the soil is most quickly de-

pleted are phosphorus, nitrogen and potassium. The fertilizer industry, therefore, is at present chiefly concerned with securing an adequate supply of the raw material of these three substances, and the development of a wider and more intelligent use of fertilizer, especially at this time when the world war endangers certain of the supplies and at the same time necessitates an increased yield of food.

Phosphorus, in the form of compounds, enters into the structure of plants chiefly in the seeds and fruit and through them into animals. In the latter it is an important constituent of bone and is present also in matter, thus being especially important to man. The basis of commercial fertilizer is an impure compound of phosphorus occurring in nature in large masses and known as phosphate rock, of which the United States is the world's greatest producer. Among the other sources of phosphorus, fish scrap, cotton seed meal, bones, slaughterhouse refuse, and guano are the most important, but the demand for these substances for other purposes is fast reducing their availability for fertilizer. The chief producer of phosphate rock in this country is Florida, which contributes 75 per cent. of our annual output of 3,000,000 tons. Here the rock occurs in deposits which can be economically worked and their positions near the coast affords cheap transportation to manufacturing centers. There are smaller deposits in Tennessee, South Carolina, Kentucky, and Arkansas, in 1916 a large belt of country from Salt Lake City to Helena, Montana, was found to contain a large amount of phosphate rock. This field has not yet been much developed owing to the small local demand for fertilizer and the long freight haul to the East. Phosphate rock to be made suitable for fertilizer has to be treated with about an equal amount of sulphuric acid, which was, until the war, obtained from pyrite imported from Spain. Since this source has been endangered by submarine war-

fare, the numerous small deposits of pyrite in the eastern United States have had a limited development. The statement by the government of a definite postwar policy with regard to the protection of this new industry would undoubtedly speed up development along these lines.

Nitrogen contributes stalk growth to the plant and in animals enters into the composition of the proteid compounds, of essential importance in the life processes. The chief source of nitrogen has long been sodium nitrate, obtained chiefly from the deserts of northern Chile, but owing to the demand for this substance for use in explosives and to the high price caused by the royalty imposed by the Chilean government, the nitrogen question has been a prominent one in this country for some time. The other two chief sources of nitrogen are the atmosphere and coal. The recovery of nitrogen as a by-product from coal is a growing industry, going hand in hand with a well-balanced growth of the entire coal products industry and to reach its full development must expend through a gradual extension of the uses of coke to fuel and power purposes, for the recovery of nitrogen is made chiefly from the by-product of coke ovens. The ultimate source of nitrogen, however, on which the world must eventually depend, is the atmosphere. The three practicable processes for fixing this atmospheric nitrogen have been found to be the arc process, the cyanamid process, and the Haber process. It is a significant fact that as soon as the Haber and cyanamid processes for getting nitrogen for explosives as well as fertilizer from the air, had been successfully developed in Germany, war was declared. In the United States the need has for some time been urgent to draw upon atmospheric nitrogen. Last year Congress appropriated \$20,000,000 for such a plant, but it has not yet materialized, presumably because such an industry, if established abruptly on such a large scale, would

endanger the whole coal by-product industry with its far-reaching ramifications, by setting up in competition a non-profit seeking industry.

The third major plant food is potassium, which contributes stalk strength and kernel filling to the growing plant. The chief source of potassium before the war was the great Stassfurt depot in Prussian Saxony, and the absolute cutting off of this supply led to an awkward situation in this country, and the supply is still inadequate, though we are now producing potash from a variety of sources. Chief among these are the alkali lakes of the West, which have been found to be relatively rich in potassium compounds, and another important source is the kelp, a giant seaweed which grows in considerable abundance along the Pacific coast from Lower California to Alaska. Among other minor sources is the successful application of a method of recovering potash out of the dust from the flues of Portland cement plants and iron blast furnaces. The most important question concerning this new industry is, what will become of it after the war, when the importation of cheap potash from Europe is resumed? The proper solution of this problem would seem to be a governmental subsidy, rather than high tariff on the foreign potash, which would result in higher prices to the farmer and an increase in the price of food.

In concluding his interpretation of the fertilizer situation, the author states that the responsibilities of the government in this respect have not yet been realized. Solution of the problems should grow out of a policy of anticipation, not out of a lagging accommodation to passing conditions. One of the most pressing problems is the development of domestic sources of supply, not only that a repetition of the present situation will be impossible, but also that a more extensive peace-time production will be the outgrowth. The American public have an interest in this matter. It

**Must Cut Down.**

Washington, Oct. 19—Any sugar famine that hits the United States will come because the world's sweet tooth is filled largely by this country. The food administration tonight issued a bulletin showing the vital need for conservation of sugar and showed the United States is exporting 18 times as much sugar as before the war. If the rest of the world is to receive any sugar at all, Americans will have to cut down their own consumption, for supplies from the Belgian, Austrian and German fields have been cut off and the Argentine beet crop has failed two years successively.

Mr. Hoover has asked that every American reduce his use of sugar by seven ounces weekly. If this were done Americans would still be using 67 pounds per capita per year, whereas Englishmen are getting only 26 pounds, Frenchmen 18 and Italians 12. The extent to which the English sweet tooth has suffered may be seen in the fact that before the war it received 93 1-3 pounds of sugar per year.

The food administration gives the following figures of the United States: In 1912, 83,747,751 pounds; in 1913, 47,987,761 pounds; in 1914, 72,323,615 pounds; in 1915, 581,710,510 pounds; in 1916, 1,665,895,639 pounds, and in 1917, 1,254,551,280 pounds.

**Rural Policeman Held for Killing.**

The coroner's jury which investigated the killing of Coroner C. A. Scott, of Richland county, several miles below Columbia is holding Rural Policeman J. W. Helms who was with the dead man at the time of his death, for the killing. Helms has made no statement further than to admit, according to witnesses, that he fired the fatal shots.

It is their duty to inform themselves in this regard and to increase in order to press and shape effective action.

**Fought Over a Woman.**

In these days when aerial duels are of almost hourly occurrence it may be interesting to recall the circumstances of the first conflict of this nature. This combat, which was the result of a quarrel between two Parisians, M. de Grandpre and M. le Pique, over a lady engaged at the Imperial Opera, was fought in 1808.

The two rivals having agreed to settle their respective differences by a duel, decided that the fight should take place in the air. Two balloons were constructed, identical in every detail, and on the appointed day Grandpre and his second entered the car of one balloon and le Pique the other. The scene of the ascent was the garden of the Tuileries, and thousands of spectators journeyed from all parts of Paris to witness the novel event. The rivals had agreed to fire at each other's balloon, with the idea of bringing it to earth by the escape of gas.

When the balloons were some eighty yards apart and about half a mile from the surface a signal to begin firing was given. M. de Grandpre sent a ball through le Pique's balloon, which collapsed with such frightful rapidity that le Pique and his second were dashed to pieces. De Grandpre, however, continued his ascent, and terminated his voyage at a spot some twenty-one miles from Paris.

**Jerry Moore Goes to War.**

Jerry Moore is to go into the army. He has been drafted from Florence county, and has been certified by the district board of the county board. Recently Jerry has been living at Dodson, La., but his name was drawn from Florence county. He stood his physical examination at Dodson, and has been accepted. It will be recalled that Jerry Moore made the world's record for the best yield of corn on an acre, 228 bushels and three quarters, in 1910.

Many men are but stuffed suits of clothes.

# Orangeburg County Fair

## November 6th, 7th, 8th and 9th, 1917

### ORANGEBURG, SOUTH CAROLINA

HAS OUTGROWN ITS NAME.

THE STATE FAIR FOR LOWER SOUTH CAROLINA

**BIG IMPROVEMENTS.**

Rest room for Ladies; remodeled Cow Barn; Better accommodations for patrons.

**PREMIUM LIST.**

Containing Prizes and Purses amounting to thousands are ready for distribution.

Horse races. Best and biggest Carnival Company that has ever played Orangeburg Fair, carrying fifteen paid attractions, two bands and two free acts.

**EDUCATIONAL DAY.**

Crowning of "Goddess of Liberty." Beautiful Floral parade.

**CITADEL-CLEMSON DAY.**

Citadel-Clemson Foot Ball Game. Presentation of Trophy Cup to winner by the Governor of South Carolina. Big Dance by ladies of the Dixie Club, all are big feature events.

**CONCERTS DAILY BY THE SECOND SOUTH CAROLINA REGIMENTAL BAND OF TWENTY-SEVEN PIECES.**

## ARE YOU COMING? Big Free Acts to Amuse the Crowd.