NEXT WEEK--Announcement of Our Special Features for Next Year.

THE PROGRESSIVE FARMER.

A Farm and Home Weekly for the Carolinas, Virginia, Tennessee and Georgia.

PROGRESSIVE FARMER—VOL. XXI. NO. 43.
THE COTTON PLANT—VOL. XXIII. NO. 42.

RALEIGH, N. C., DECEMBER 6, 1906.

Weekly: $1 a Year.

DENATURED ALCOHOL—WHERE THE FARMER COMES IN.

Zach McGhee Writes an Illuminating Explanation for Progressive Farmer Readers—The Farmer Raises the Crops From Which the Denatured Alcohol is Made, and Will Reap Benefit From Its Widespread Use.

Messrs. Editors: "Denatured alcohol" is just ordinary ethyl alcohol, the same that is in corn "licker," with some kind of stuff put into it, not to take the "booze" out of it, but to take away its tempting taste and smell, so that no mortal man, unless he be a hopeless toper, say an Indian who will drink red ink for the small quantity of alcohol there is in it, will drink it. Then it is no better for use in the arts and industries, not so good, perhaps, but it is no longer a luxury which can be properly taxed nor a nuisance to be suppressed. The most approved way of "denaturing" it is to put about 10 per cent of methyl, or wood alcohol, into it, which will make it poisonous, and 1 per cent of benzine into it to make it wholly unattractive to the smell of any one except an automobile enthusiast.

In the last session of Congress the "denatured alcohol bill" was passed, which authorized the withdrawal from bond of alcohol free of tax provided it is denatured after it is withdrawn in such a manner that it cannot be used as a beverage or in the manufacture of liquid medicinal preparations.

Some Wonderful Things That Were Predicted and Didn't Happen.

An interesting and even somewhat exciting propaganda was conducted in the advocacy of this bill. People all over the land were told the wonderful benefits which were to accrue from it. Kerosene and gasoline were to perish from the earth; the greasy, oily, smoke-and-soot-begrinned kerosene lamp was to be smelt no more in the land, and every conceivable piece of domestic machinery from cotton gins and automobiles to wheel-barrows and egg beaters were to be run by this wonderful denatured alcohol. And as for the farmer, he was to flourish beyond all power of expression and live forever in the land of Goshen. Under the operations of this denatured alcohol bill, all he would have to do would be just to pick up the refuse matter on his farm, such as potato peelings, corn-stalks, rotten onions, faulty cabbages, cane pulp, watermelon rinds, corn-cobs, almost anything, in fact, except possibly old barrel hoops and tin cans, distill them in his tea kettle, or spider skillet, then put the distilled liquid into the lamp to light the house, cook with it, heat the boiler furnace with it, drive the sewing machine, the hay mower, and the churn, and generally live happy ever aferwards.

This was when they were trying to get the bill passed. But as in the case of most of the bills for the improvement of farm conditions and farming people, its benefits seemed much greater before than they are likely to seem after the bill becomes a law; for some time to come, any way.

Investigations and Experiments.

But denatured alcohol is interesting to the farmers, and it is well that they learn something about it. The Agricultural Department here has been trying to assist them in this, and in addition to answering numerous personal inquiries on the subject, the officials of that department have prepared several bulletins, dealing with the uses to which alcohol may be put and the materials from which is may be made. People all over the country are inquiring about it, chemists and inventors, and manufacturers are discussing it and trying to devise ways of making it profitable. A few nights ago I attended a lecture at the Cosmos Club here by one of the agents sent to Europe by the Internal Revenue Commissioner to study what the various European governments were doing to stimulate the use of alcohol in the arts and industries. The makers of machinery have been trying to devise ways of operating various kinds of implements and machines by alcohol instead of benzine, naptha, gas, gasoline, coal, and even electricity. The Department of Agriculture has been assisting in this also. The department has engaged one of the professors at Columbia University, Dr. Lucke, who is now making experiments with irrigation machinery with a view to substituting alcohol for naphtha. In a short while the result of Dr. Lucke's investigations will be submitted, when another bulletin will be issued.

Already plowing machines, mowing machines, reapers, binders and other farm machines have been successfully operated with alcohol as the fuel. Various kinds of stoves and lamps have also been invented in which alcohol is burned. The general principles of burning alcohol are the same as burning any other substance for fuel, but there is a marked difference between an alcohol lamp and an oil lamp. The flame from alcohol gives out practically no light at all, being a very thin, blue flame, which, when at its best, is scarcely visible at all. An alcohol lamp, therefore cannot emit light from the flame. It must be made on the principle of the Welsbach burner, in which there is a mantle composed of some substance which, when highly heated, gives out light.

The Farmer Raises the Stuffs That Alcohol is Made From.

The farmer does come in, though, and the farmers of the South at that, especially in North and South Carolina where alcohol-producing articles are so easily raised. The propaganda for a more common use of alcohol in the arts and industries is going on, but the idea which is of most interest to our farmers is not so much to use alcohol themselves as to try to manufacture it cheaper and encourage its use, substituting it everywhere, when possible, for gasoline, wood alcohol, and so forth so that the demand for it will increase. Then the farmers will get a higher price for potatoes, arrow roots, artichokes, cassava, rice, and other substances from which alcohol can be made.

Any substances containing starch, sugar, or cellulose can be utilized for making alcohol. Of all the farm products, rice is the most valuable for this purpose, having the largest proportion of fermentable matter in it. Of the root crops, potatoes, including the yam and other varieties of the sweet potato, are the most valuable; but turnips, rutabagas, carrots, parsnips, artichokes, beets and other roots can be used.

The principal starch-producing plants are the cereals, the potato, and cassava. With the potato, though not botanically related to it, may be classed the yam and other sweet potatoes. Among cereals, rice has the largest percentage of starch and oats the smallest. The potato (Irish) as grown for the table, has an average content of about 15 per cent of starch, When a potato is grown specifically for producing alcohol, a variety is grown which contains a larger quantity of starch, nearly 20 per cent. Cassava contains from 20 to 30 per cent of starch. Corn stalks, those of sweet corn, field corn, and the stalks of sugar cane and sorghum contain large quantities of sugar, from which alcohol can be produced. Fodder, when green, before it is dried for forage, will yield alcohol in considerable quantities. Already alcohol is produced in large quantities from the waste materials in sugar and molasses factories. And various waste materials can be utilized.

How the Farmers May Reap Benefit.

The process of manufacture might be a simple one, too, but it is right here that, so far as the farmer is concerned, the law does not go far enough. No man may set up his own distillery and make alcohol for sale. All of it must be made in regular authorized Government distilleries, and placed in bond, from which it may be withdrawn without tax if denatured. Certain concerns have applied for licenses to manufacture alcohol especially to be denatured, so far about eight applications having come to the Commissioner of Internal Revenue; but there seems little enthusiasm about it, for the reason that as yet the demand for it has not become very great. The law does not go into effect till January next. Meantime the propaganda goes on, and people everywhere are studying the subject.

The best way, perhaps, for the farmers of our section, in Virginia and the Carolinas, to reap any benefit from the new law would be to organize companies and establish distilleries to which they could carry their surplus potatoes, and other starch roots and waste products, from which alcohol can be made. If they can make it for something like twenty-five cents a gallon they will likely be able to sell all they can make. And under the right kind of economy and management, it does not seem that it ought to cost more than that. Certainly not, if waste products can be utilized.

ZACH McGHEE.

Washington, D. C.

MR. C. F. KOONCE.

In its twenty years and more of continuous publication The Progressive Farmer has had many traveling representatives, but none more efficient than Mr. C. F. Koonce. We are printing his picture herewith simply for the purpose of introducing him more formally than we have done hitherto to the whole Progressive Farmer Family.

When you meet him at your Farmers' Institute or other farmers' meeting—and he gets to many of them in both Carolinas and Virginia—you will find him bringing wanderers into the fold about as rapidly as any man you have ever seen, and any help you give him will be appreciated.