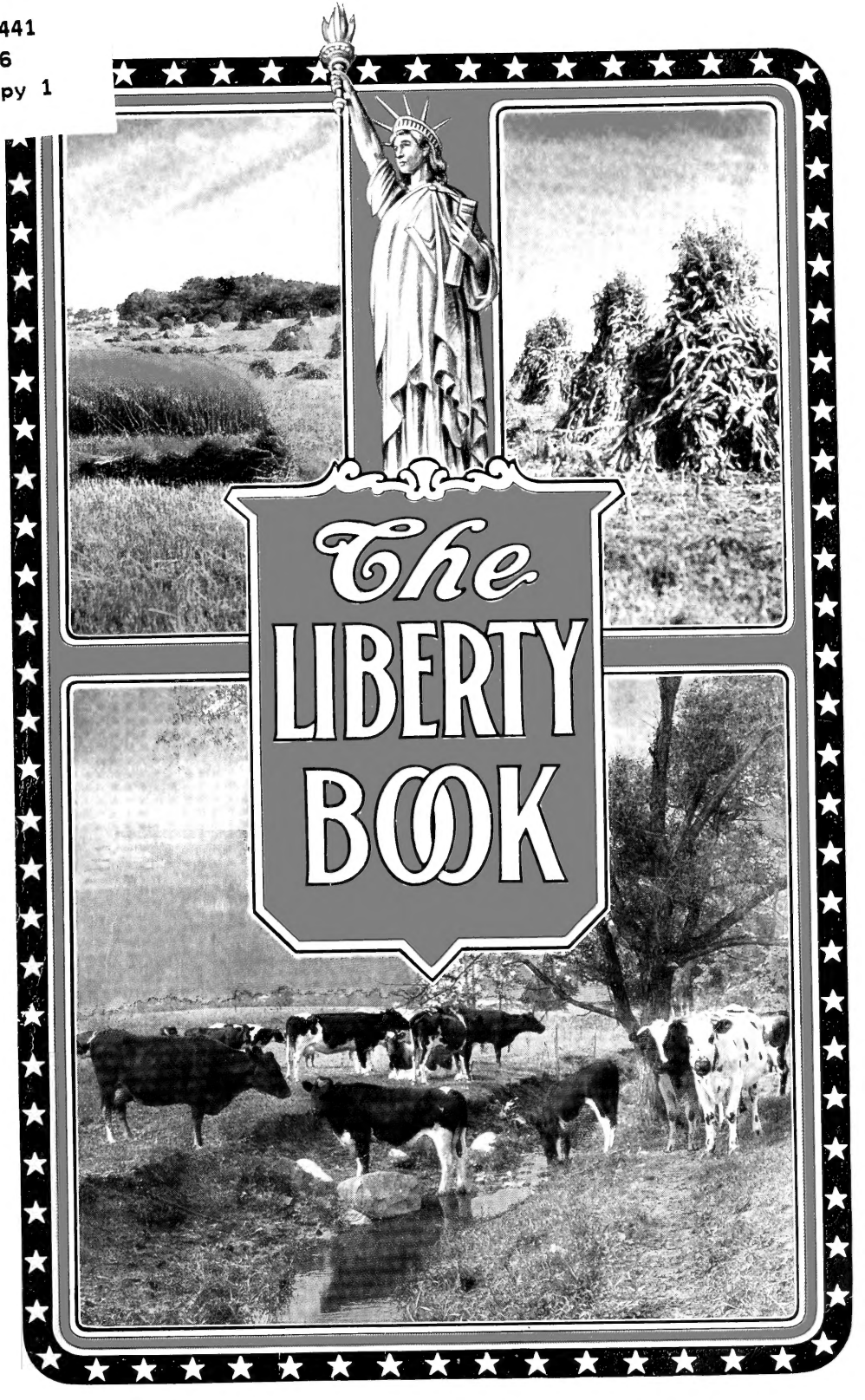

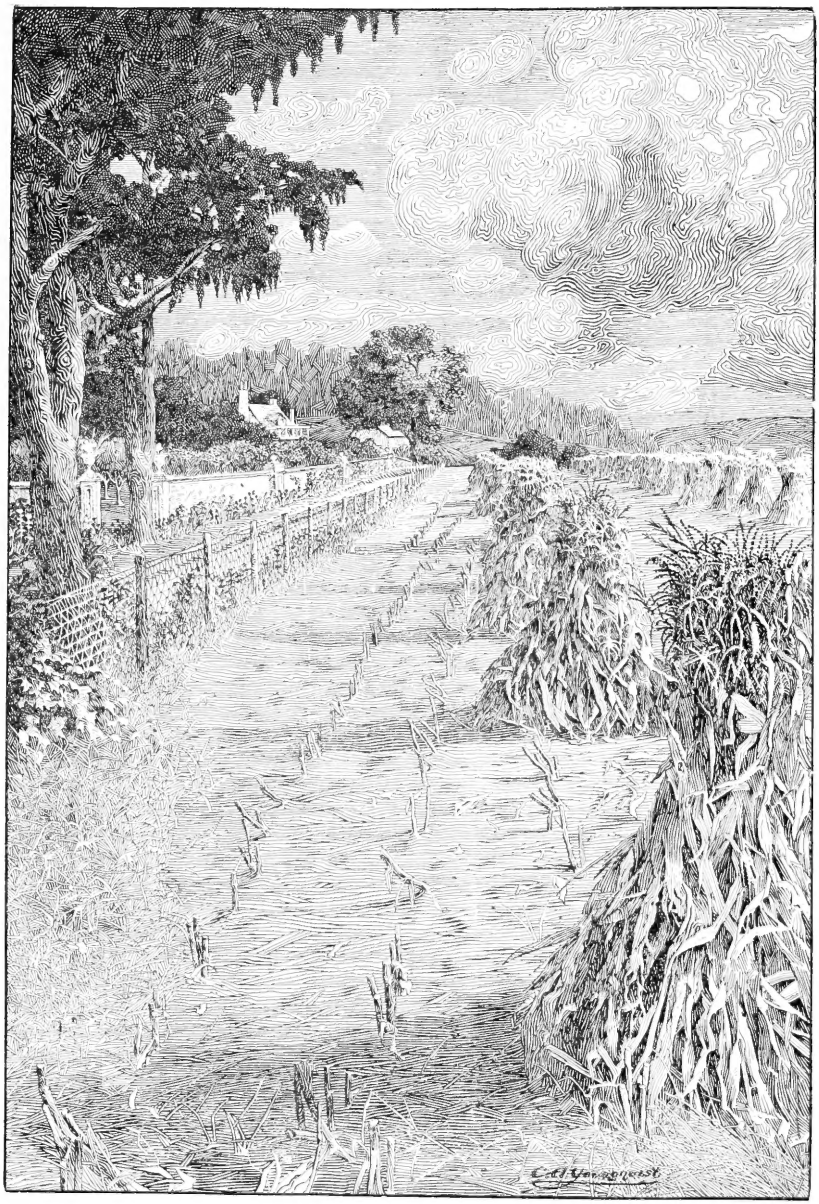

THE LIBERTY BOOK

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Agriculture

NEVER before in the history of the world have we been so impressed with the great importance of Agriculture

Upon it, in time of peace or in time of war, depend the Life, Liberty and Well-being of the world.

Patriotism of the Soil

WE glory in the patriotism of arms, but we do not fully realize the equally essential patriotism of the soil.

The farmer's service to his country is as great as that of any man engaged in the world war, for our most decisive line of defense must be our farms, our gardens and our orchards.

America has vast resources, but one of the basic principles of national preparedness lies in the soil. Food is the chief material concern of life—a nation can be no more self-sustaining or self-protecting than its lands will enable it to be. No nation can be any greater factor in the world's progress than its soil makes possible.

It will take years to completely restore the depleted resources of the warring nations.

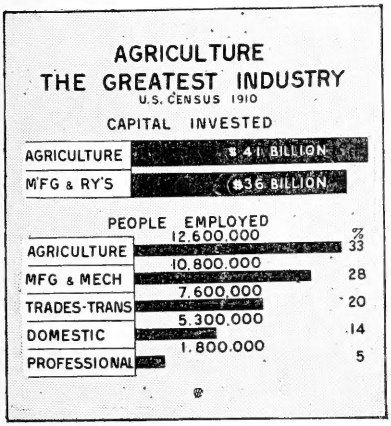
People must be fed.

To feed her own people—to help feed the people of other nations, is America's obligation to the world.

This is the patriotism of the soil.

AGRICULTURE THE GREATEST INDUSTRY

IN the United States there are about 40,000,000 people engaged in money-making pursuits. Of these, about 13,000,000 are engaged in agricultural work; 10,800,000 in manufacturing and mechanics; about 5,300,000 in domestic service. (This class needs some explanation. It includes keepers and employes of hotels, restaurants, boarding and rooming houses and laundries, bootblacks, umbrella menders and scissor grinders, employes of saloons and dance halls, and of some minor occupations. It does not include housewives, who are classed in the U. S. Census Report as having "no occupation.") Seven million, six hundred thousand are employed in trades and transportation, and 1,000,000, or only 5 per cent of the workers, are in the professions—law, medicine, teaching, ministry, etc.



Yet for years our school system has been based on the needs of that 5 per cent.

Isn't it about time that we gave some consideration to the other 95?

Trade schools and manual training have been receiving consideration for several years, but it is only very recently that we have begun to give any attention to this largest group of all—the agriculturists, who comprise 33 per cent of our working population.

Not only that 5 per cent, but all these boys and girls have a right to ask that the schools give them some training for carrying on their work in the world.

It is not practical to educate all the 25,000,000 school children of the United States for the professions, if less than 2,000,000 of them can find employment in those lines.

Training in agriculture will result in a general improvement in agricultural practices, and the direct and immediate result of this improvement is better homes, better schools, and better education.

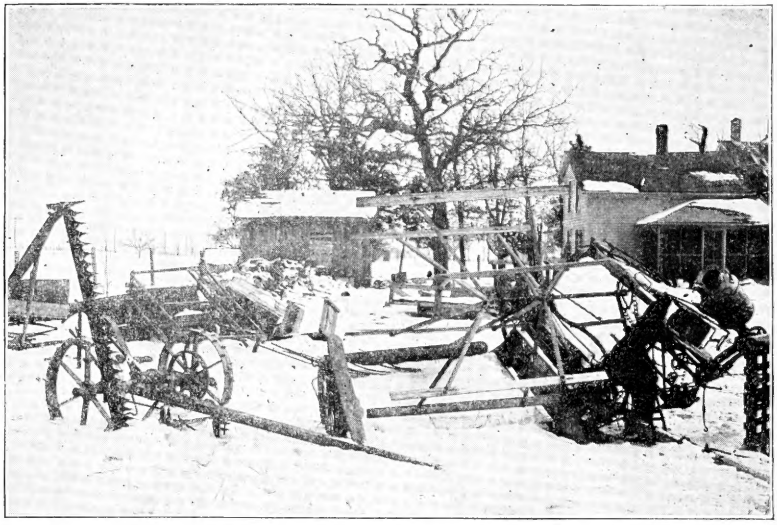
LOST—FIVE BILLION DOLLARS

THE principles of good business observed in manufacturing or commercial pursuits, apply also to the business of farming. This is especially true at this time when efficiency in every line of endeavor is imperative.

On the farms of the United States there is an average annual loss of about 30 per cent of the gross income, and all this waste can be prevented.

The principal sources of this loss are as follows:

Failure to test seed corn, more than $100,000,000; improper harvesting and storing of seed corn, millions of dollars in yield and quality; planting of imported seed corn, cannot be estimated;



Exposing farm machinery to the weather costs thousands of dollars every year. Implements should be kept under cover when not in use.

ravages of corn root worm, more than $100,000,000; waste of cornstalks left in field instead of being put in silo, at least $500,000,000; failure to treat small grains for smut, $35,000,000; waste of manure through careless handling, $100,000,000; weeds, $300,000,000; hog cholera, over $65,000,000; Texas fever cattle tick, nearly $500,000,000; "scrub" dairy cows, $745,000,000; for depreciation of farm machinery and tools from failure to house or care for them; soil erosion resulting from one-crop system of agriculture; and for carelessness, neglect, shiftlessness—because we are in the rut—we will charge $2,500,000,000 more.

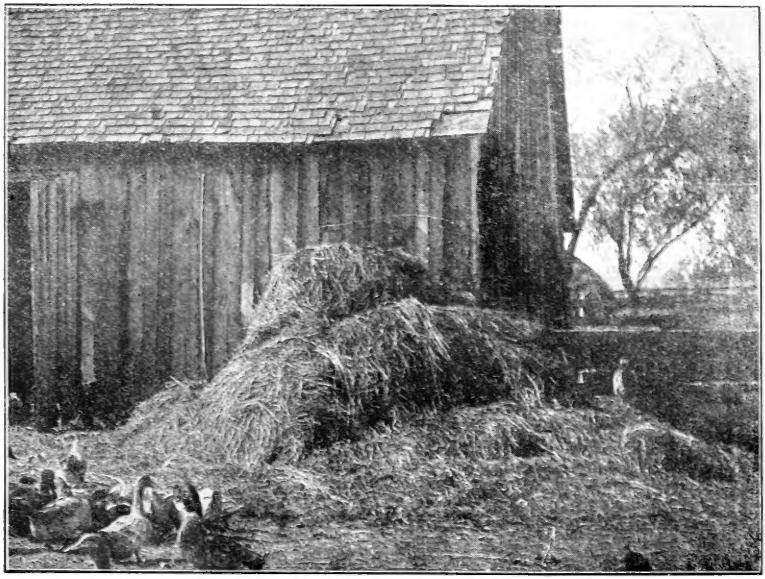
Easy To Prevent Losses

It is an easy matter to harvest seed corn at the right time and to store it where it will be protected from the weather. It costs about 15 cents to test enough seed corn to plant an acre, so why not test it? The corn root worm can be easily starved out by crop rotation, and corn stalks can be converted into the best of succulent feed by placing them in the silo.

The treatment of small grain for smut with formaldehyde requires but little time and costs but 1 cent a bushel; and the proper use and care of manure is met by the use of the manure spreader.

Kill the weeds with profitable crops. Hog cholera can be prevented. The dipping vat will eradicate the Texas fever cattle tick. The milk scales, the Babcock test, and the feed and milk record will do away with the "boarder cow." Don't you think it worth while?

Let us all get busy and do all we can to stop these tremendous losses. Let us put these millions into Liberty Bonds and help Uncle Sam win the war.



Annually $100,000,000 worth of manure is wasted through failure to spread and by exposure to the weather, allowing the fertility to leach away.

EGG CROP LOSS $50,000,000 A YEAR

AT present prices the value of poultry products in the United States is fully three-quarters of a billion dollars annually. It should be much more.

Government reports show that poultry is raised on only 4,000,000 out of 6,000,000 farms in the country; that the average number of fowls to the farm is 50, while in Iowa it is 130, and that the average farm hen produces 60 eggs a year, when with proper feed and care she would produce 100 eggs or more.

If the 6,000,000 farms in the United States had an average of 100 chickens each and each hen produced 100 eggs a year, the annual income from eggs at present prices would be nearly $2,000,000,000.

60 Eggs—What the Average Farm Hen Produces

120 Eggs—What She Should Produce

These figures show the possibilities of the poultry industry.

Since the beginning of the war our annual exports of eggs have been increased from 16,000,000 to 26,000,000 dozen.

Large flocks of poultry are needed on every farm and every farmer should keep his young pullets, which will soon be his best layers. Get rid of the roosters. Avoid wasteful methods in handling poultry and in marketing eggs.

Enormous Waste in Eggs

The waste in eggs in the United States every year amounts to nearly $50,000,000. It is estimated that 17 per cent of all the eggs produced in this country become unfit for human food

before reaching the consumer because of careless methods of handling.

These losses can be prevented very largely by producing infertile eggs, by keeping the nests clean, by careful handling, by gathering eggs daily, by storing them in a cool, dry place, and by marketing them at least once a week and twice a week if possible.

Few people understand that eggs are almost as perishable as meat or milk; that eggs will not stand any kind of treatment. Eggs belong to the same class of food as meat. If we do not produce more eggs, let us at least care for our present production —that is a duty as well as good business.

SCRUB METHODS MAKE SCRUB PEOPLE

"AS I was coming along the road this afternoon," said a well-known lecturer in addressing an audience in a rural school in Texas, "I saw scrub cows, scrub pigs, a scrub barn, scrub fences and a scrub house. And now what else do you think I saw, children?" he asked.

Instantly a little girl in the audience sprang to her feet and replied:

"I know, you saw a scrub man."

Unconsciously the child uttered a great truth.

Wherever we find poor livestock, fences that are falling down, barns and houses that need painting and repairing, and a general air of neglect around the place we are sure to find scrub people. We are judged by what we have about us; by the quality of our live stock; by the general appearance of our homes.

If we employ scrub methods of farming, we will have scrub farms.

Cattle standing knee deep in mud and manure, hogs wallowing in mire, fence corners filled with weeds higher than the fence, piles of manure washing away and losing their value as fertilizer, farm machinery left out in the rain and storm, open wells, poultry roosting in trees and laying eggs in the tall grass because there is no poultry house, corn stalks going to waste in the field for lack of a silo—these are a few of the scrub things that make scrub farms and scrub people.

We must quit doing things in a scrub way if we are to help win the war—for this is no scrub war.

FIGHT WEEDS WITH PROFITABLE CROPS

THE labor of a human being is the most precious thing on earth. Why waste it fighting weeds? If your work brings you in contact with weeds, for the sake of Liberty, fight them with profitable crops—fight them with corn, oats, wheat, hay, hogs, sheep, and cattle.

It is estimated that a man walks eight miles in plowing an acre once over. Multiply this by harrowing, cross harrowing, and cultivating two or three times, and in the end figure that all this labor has been given to the production of a crop which is only two-thirds as large as it would have been if it had not been choked by weeds.

Weeds cut down the yield of corn.

Weeds cut down the yield, damage the crop, cheapen the product, reduce the profits, rob the soil, injure stock, reduce land values. Weeds cost the farmers of the United States more than $300,000,000 according to government estimates. There is great loss from dockage of grain from weed seeds.

The weed which is best able to cope with difficulties is the weed which survives. These veteran weeds are the enemy-weeds of the farmer. There are thousands of them against which to wage war. They are thrifty and prolific.

A single plant of shepherd's purse may produce as many as 50,000 seeds; squirrel tail produces 300 to 2,000; plantain may bear 3,000 per plant; foxtail, from 1,000 to 5,000 seeds; stinkweed, 20,000 seeds; the Russian thistle from 100,000 to 200,000 seeds; one mustard plant, one and one-half million seeds, and so on. Compare these prolific soil robbers with our food-producing plants.

Some of the Bad Weeds

But there are other weeds—milkweed, smartweed, Spanish needle, mustard, peppermint, tansy, poison hemlock, jimson, morning-glory, ragweed, velvet leaf, purslane, quack grass, wild garlic, Canada thistle, ox-eye daisy, bindweed, orange hawkweed. Johnson grass, sorrel, wild oats, and 50 others that are common in every state.

Weed seeds are spread chiefly by sowing impure seed, by scattering weed seeds in feeding hay, straw, screenings, and in manure; by winds, water, and snow; by animals and birds; by farm machines and railroads; by weeds allowed to flourish in waste places.

Weed Remedies

The problem is how to get rid of weeds and keep them out.

First, rotate the crops; cultivate frequently and thoroughly; cut the weeds before they go to seed; screen all seed.

If your wheat field is weedy, seed it to clover and blue grass; mow the annuals and biennials before they seed, pasture with sheep or hogs to keep down the perennials; follow by a cultivated crop to kill any lingering weeds, and you will have disposed of most varieties.

To allow land to go to waste is an economic crime.

Use it! Farm it! Grow foodstuffs, not weeds!

DO THE DUTY THAT LIES NEAREST YOU

"The world will be redeemed; it is being redeemed; not by those who threaten and demand, but by the men and women who do the duty that lies nearest them."

WASTE—WASTE—WASTE

HUNDREDS of tons of human food are wasted every day in Chicago and corresponding amounts in every other city in the United States.

The sources of this waste are:

1. Improper care of fruits and vegetables in wholesale and retail stores.
2. Failure to dispose of them before they spoil.
3. Table and kitchen "left-overs" from hotels, restaurants, and dwellings.
4. Waste of products on the farm before they reach the markets.
5. Waste of products in transit from farm to market.

Barrels of decaying fruit and vegetables waiting for the garbage wagon.

Barrels and boxes filled with decaying fruits and vegetables are daily gathered up by city garbage wagons from the rear of Chicago commission houses and taken to the municipal reducing plant, where the fats are converted into glycerine, a small portion of the rest made into tankage, and the balance destroyed. Between 400 and 500 tons of garbage is taken to the plant every day. It contains about 2 per cent of fats and 25 per cent of tankage.

While this is a reduction of 35 per cent as compared with 1916, much of this waste of human food could be prevented if the produce were disposed of at reduced prices or given away before it spoiled.

Garbage from the larger hotels, restaurants, and many flats is sold to private scavengers. In hundreds of flats the garbage is burned. This garbage, which aggregates more than 500 tons daily, contains a much larger per cent of fats—so needful for food—than that taken to the municipal plant. Much of this waste would be stopped if we were careful not to order or cook more than we can eat, or were more careful to serve in appetizing dishes what is left over from previous meals.

Over 100,000,000 bushels of potatoes of the last season's crop were wasted.

Waste! Waste! Waste! Enough food is wasted in the United States to drive the grim specter, hunger and want, from every war-stricken home in Europe. Let us all put our hearts into this great work of conservation.

WE SHOULD NOT BURN GARBAGE

WE should not burn any of our kitchen garbage. Burning garbage is a serious form of waste.

Even though we reduce our garbage to the minimum, it will still contain much matter that can be converted into human food.

If we are so situated that we can raise a pig or some poultry, this garbage can be fed to them and come back to us in the form of meat or eggs.

In towns and cities garbage disposal is chiefly a matter for community co-operation.

If the community has no reducing plant where the garbage may be converted into glycerine or soap, the city or town authorities should provide a herd of hogs to which garbage may be fed.

Four hundred hogs are fattened from the garbage from a chain of restaurants in Omaha. One hundred of these hogs are ready for market every three months.

Hull, Massachusetts, has a herd of 325 hogs, which convert garbage into pork.

Young pigs were purchased by the Town's Committee of Public Safety and one man hired to take charge of them. The use of land for housing and pasturing was donated, and the only expense was the cost of the pigs, and houses, and the wages of the manager.

Any town can do what Hull is doing.

MAKE POTATO WAR BREAD—MEANS TEN WHEATLESS DAYS A MONTH

IT is hardly possible to estimate from a standpoint of food conservation the great value of potatoes as a substitute for wheat and other grains in the making of bread.

One hundred million bushels of small potatoes will save 75,000,000 bushels of wheat. About 30 per cent of the annual potato crop in the United States consists of small potatoes which are unmarketable, made little use of, practically wasted, almost a total loss to the country. The small potatoes can be substituted for one-third the wheat flour used in making bread. Potato bread is better bread in every way than bread made entirely of wheat or a combination of wheat and other grains.

It is widely reported that because of a lack of transportation from the points of production to the centers of consumption, hundreds of thousands of bushels of potatoes will rot this spring. This tremendous waste of one of our staple foods could have been entirely prevented if the people of the United States had known of the great value of potatoes in bread making as a substitute for wheat flour. It is not too late now to reduce the waste to a minimum. Transportation is not at this time and never has been the problem of utilizing the potato crop and preventing waste.

Use Potatoes Where They Are

Nearly 60 per cent of the people of the United States reside on the farms and in the small towns where the potatoes were produced and where bread is made in the homes instead of in commercial bakeries. And over half the enormous 1917 crop of potatoes is still in these rural districts.

The use of potatoes as a substitute for one-third the wheat in making bread is not a question of transporting potatoes over congested railroads, but of using them where they are before they rot and go to waste. It is a question of relieving transportation by using the potatoes without having to move them.

The production of potatoes to the acre is eight times that of wheat, barley, rye, or corn. Everybody has potatoes. They cannot be carried over. They must be used now or they will spoil.

Potato bread is both better bread and cheaper bread. It saves wheat for our soldiers without taking a single pound of feed away from our live stock. Not only is it patriotic to use potatoes in making bread; it is good business.

The use of potatoes in bread is economical at any time. It is patriotic at this time; it utilizes waste potatoes; saves wheat and other grain which can be exported; saves corn, barley and oats which can be used to produce meats and fats for our soldiers; gives us white, moist and wholesome bread for every meal; does not require extra work for the housewife, nor change the usual custom and practices of the home; means two and one-third wheatless days a week, 10 wheatless days a month, four wheatless months a year.

Saves Waste of Potatoes

Potatoes are grown in every section of the country, found in every home, are a universal food. Every family can produce them. Potatoes are an abundant crop in the United States; the possibilities of increasing the total yield in this country cannot be estimated. Potatoes are a perishable crop—cannot be exported to foreign countries, cannot be carried over from one season to another. The potatoes we grow in this country we must use at home. The nature of potato starch is so nearly the same as wheat flour that there is no difficulty in using this combination in bread making.

Last season the farmers of the United States produced about 440,000,000 bushels of potatoes. About 100,000,000 bushels of this crop were small, irregular, unmarketable potatoes.

In no other way can so great a saving be made in food in America with so little labor and so small expense as the use of small potatoes in the making of bread in place of small grains which can be shipped to our soldiers and the fighting armies of the allies to help us win this war.

Rice, oatmeal, rolled oats, barley, graham, buckwheat, milo or kafir flour, peanut meal, etc., any substitute flour or grain, except corn meal, may be used with one-third potato and one-third white flour, and will produce very palatable bread.

Bread made of one-third potato, one-third corn meal, and one-third white flour, sours before it gets light.

Increases Value of Potatoes

When potatoes are worth 1½ cents a pound wholesale and flour is selling at 6 cents a pound retail, potatoes are worth fully 135 per cent more when made into bread than when sold on the market. A bushel of potatoes worth 90 cents will replace flour worth at least $2.12.

In making potato bread, a cup of boiled and riced potatoes, weighing 7½ ounces, replaces a cup of flour, weighing 5½ ounces. On this basis it will require 67 pounds of riced potatoes to take the place of 49 pounds of flour.

Experiments show that during the process of boiling, peeling and ricing potatoes lose from 10 to 20 per cent, according as they are boiled or baked, or are peeled before or after cooking. On the basis of 20 per cent loss, it would require 83½ pounds of raw, unpeeled potatoes to make 67 pounds of cooked and riced potatoes.

At 1½ cents a pound, 83½ pounds of potatoes are worth $1.25. But when used in making bread, they are worth as much as the flour they replace, or $2.95. On the same basis a bushel of potatoes, quoted at 90 cents on the market, would be worth $2.12 if made into bread.

If a farmer took a bushel of potatoes to market and invested the 90 cents he received for them in flour, he would get but 15 pounds. But if his wife used the bushel of potatoes in making bread, she would save 35⅓ pounds of flour.

We should not let our potatoes rot. Every bushel that goes to waste represents at least 35⅓ pounds of flour, or its equivalent in wheat, so badly needed by our allies and our boys at the front. On the basis of 4½ bushels of wheat to a barrel of flour, the 120,000,000 bushels of small potatoes wasted nearly every year will save over 93,000,000 bushels of wheat.

The first of these loaves was one third sweet potato; the second, one third Irish potato; the third, all wheat flour.

How to Make Potato War Bread

⅔ cup sweet milk
1 cup potato
1 cup flour
1 cup substitute flour except corn meal
1 teaspoon salt
1 teaspoon sugar
½ yeast cake

These measures make one loaf. Increase ingredients according to number of loaves you wish to make. One yeast cake will make 3 or 4 loaves.

Heat milk to boiling point, then cool to luke-warm. Bake or boil potatoes, then mash or put through ricer. Dissolve yeast cake in the milk. Make a sponge as follows: Mix milk, yeast cake, salt, sugar, all the mashed or riced potatoes and ⅓ of the flour. Beat well, let stand over night to rise. In the morning add balance of flour—let rise again until double in bulk; mold into a loaf; let rise again to double in bulk; bake 40 minutes in a moderate oven. A little more flour will be needed if potatoes are not mealy.

Potato Biscuits

1 cup flour
1 cup substitute except corn meal
1 cup potato
3 teaspoons baking powder
1 scant teaspoon salt
1 tablespoon butter or lard
1 teaspoon sugar

Sweet milk to make a dough which can be rolled for biscuit.

Sift flour, baking powder, salt, and sugar together. Work butter or lard into flour, add potatoes which should be boiled or baked and put through ricer, then add milk to make a dough which can be easily handled on board. Roll out about ½ inch thick, cut with biscuit cutter and bake 15 minutes in a quick oven.

Potato Doughnuts

1 cup sugar
½ teasp'n short'ng
1 egg
½ cup sweet milk
¼ teasp'n cinnamon
¼ teasp'n nutmeg
2 teaspoons baking powder
1 cup riced potatoes
2 cups flour
½ teaspoon salt

Mix sugar, spices, salt, and shortening. Add well-beaten egg and milk. Beat well, and add flour and baking powder which have been sifted together. Mold on board and roll to ½ inch thick; cut with doughnut cutter and fry in deep fat.

WAR JOHNNY CAKE

Ingredients

Corn Meal, 1 cup; Boiling Water, 4 cups; Salt, 1 teaspoon.

No Milk, No Eggs, No Baking Powder, No Soda.

These measurements make three cakes baked in pie tins.

Method

Pour the boiling water on the corn meal and salt, about one cupful at a time, stirring briskly to keep from forming lumps. Pour this batter into well buttered hot pie tins. Spread evenly over tins, then take a tablespoonful of cream and smooth over the top. (This makes a brown crust on the top when baked.)

How To Bake

Bake in a hot oven about 40 minutes.

Eaten with butter as a breakfast dish it is delicious.

A LITTLE SAVED BY EACH MEANS MORE FOOD FOR ALL

If each of the 22,000,000 families in the United States saved, each week—

One pound of wheat flour. One pound of beef. One pound of pork. One pound of sugar—

This would mean—

Four hundred and fifty thousand sacks or 112,500 barrels of flour a week.

Three pounds of beef a week to each of 7,335,000 soldiers.

One-half pound of pork a day to each of 6,000,000 soldiers.

Four ounces of sugar a day to each of 12,000,000 soldiers and civilians in the war stricken countries.

MONEY WILL NOT BUY FOOD IF THERE IS NO FOOD TO BUY

WHILE farmers and gardeners have been using every means possible to increase our production of foodstuffs, housewives can do much to prevent food shortage by practicing household economy.

America may have great wealth, but money will not buy food if there is no food to buy.

The waste of food in the United States is enormous. According to the health commissioner of Chicago there has been a daily waste of 1,200,000 pounds of food in Chicago—one-half of which could have been used.

This means that for every resident of Chicago, one-fourth of a pound of wholesome food is thrown away each day.

This is nearly equal to the daily allowance of food per person in Germany.

There is similar waste in every city in America. There is waste in every home. There is waste in the preparation of food, and there is waste in its consumption. The wasted food of the United States would feed a nation.

The man who buys more than he can eat is contributing to the shortage of food. The housewife who sets before her family more than the family can or should eat, or who neglects to make over into palatable food that which may be left from the meat, is equally wasteful; and to over-eat is not only wasteful, and unhealthful, but unpatriotic.

All Europe is living on half rations and the people are much more healthy for it.

We must practice household economy—we must double our available food supply by saving the half we now waste, and we will.

The American People are not asked to starve themselves. They should eat plenty — but wisely and without waste.

HELP WIN THE WAR BY CONSERVING THE NATION'S FOOD

Save Wheat

Observe Wheatless Day.
Have one wheatless meal each day.
Use corn, rye, barley, and potatoes for breads, puddings, gravies, etc.

Save Meat

Observe Meatless Day.
Serve only once daily on other days.
Use fish, game, eggs, poultry, cheese, milk, beans, peas.
Use left-overs.

Save Milk

Don't waste skim and sour milk.
Use less cream.
Make cottage cheese.

Save Fats

Fry out all meat trimmings.
Don't use butter in cooking.
Don't waste soap.
Boil food and save fats.

Save Sugar

Use syrups and honey
Eat less candy.

Eat More Vegetables and Fruits

I feel confident that the splendid volunteer spirit of service of the American people will demonstrate itself in solving our food problem and that all American producers, manufacturers, merchants and consumers will work together towards a common end.—Dr. R. L. Wilbur.

The Fertility of the Soil is the Capital Stock of the Nation's Business

The farm is the greatest purchasing power. Develop the agricultural and commercial interests within your trade territory and your town will build itself. The purchasing power of a town depends upon the productive power of the farms tributary to it.

GET RID OF RATS AND MICE

THE rat is man's most relentless foe. It is more destructive to property than all the great conflagrations of history; more destructive to human life than all the world's wars.

It is the apostle of pestilence, the creator of famine, the messenger of death. It fattens off the health and wealth and labor of the human race. With silent and venomous persistence it follows mankind from the cradle to the grave, attacking the infant in its sleep, the helpless sick on the bed of pain, the aged and infirm.

Every Year Rats Destroy Millions of Dollars' Worth of Wheat and Other Grains While America Is Making Every Effort to Feed the People Made Hungry by the Devastation of War.

It devours with ravenous greed every nature of food for man or beast. It destroys our poultry, annoys and injures our domestic animals, devastates our growing grain, destroys our harvest. It infests our ships, sets fire to our homes, carries fatal diseases broadcast through the land.

And not content to menace man's prosperity, health and welfare all the days of his life, it follows him into the grave to desecrate and mutilate his mortal remains.

Not only do rats and mice destroy food, but they have been known to destroy furniture, bedding, clothing, books, valuable papers, harness and personal property of all kinds. They injure buildings by undermining foundations or causing the early decay of sills and timbers. They kill trees and shrubbery by

gnawing off the roots; set fire to buildings by gnawing matches or stripping the insulation from electric wires; flood buildings with water or gas by gnawing through lead pipes; weaken dams and dikes, causing heavy losses.

In the United States rats and mice each year destroy crops and other property valued at over $200,000,000, according to the Department of Agriculture. Government officials declare it costs $1.82 to keep a rat a year.

But the loss of property is trivial in comparison to the loss of human lives caused by rats, which thrive amid filth and carry pollution with them. Millions of human beings have died of bubonic plague conveyed to man mainly by the rat flea. Trichinosis among hogs, fatal to human life, is communicated mostly by rats. Ptomaines, "septic pneumonia," typhoid, scarlet fever, diphtheria and other diseases are also believed to be caused in many cases by rats.

Rats and mice multiply rapidly, breeding from six to 10 times a year and bringing forth from six to 10 at a litter. It is estimated that the increase from one pair, if undisturbed, will amount to 20,155,000 in three years and 940,370,000,000 in five years.

There is no easy way to get rid of rats, but it can be done with intelligent and persistent effort, if active co-operation among neighbors is secured.

The homes and breeding places of the rats must be destroyed. They must be starved, killed or driven away. Rat-proof buildings and rat-proof bins and cribs for the storing of grain will do much towards ridding a farm of them.

Outdoor wood piles or any place where rubbish and tin cans are dumped give excellent protection to rats. A general cleaning up of the premises and the entire neighborhood is the first step in a rat campaign.

Keep food away from rats. Have rat-proof garbage cans and keep them covered. Where food is plenty, rats will congregate and remain and it is hard to trap or poison them.

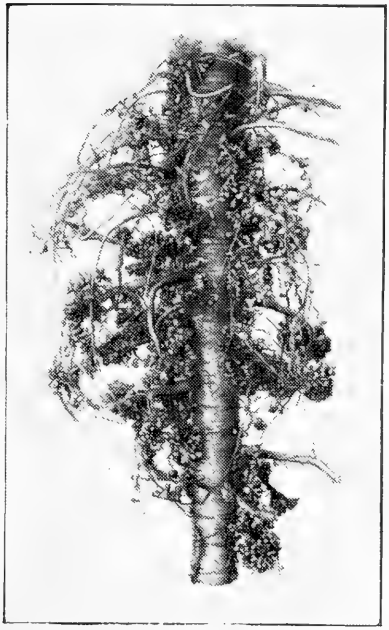
There is always danger in using poison. It is better to make generous use of the many kinds of rat traps. A frequent rat drive or "killing" will prove effective. Cats are poor rat catchers and few dogs are better. Owls are helpful in getting rid of rats, and a pine snake or bull snake will do more than all the other agencies together in killing or driving away rats.

SWEET CLOVER, IMPORTANT FARM CROP

SWEET clover, otherwise known as melilotus or bee clover, has been commonly regarded as a weed and a nuisance, but experiments made by practical farmers to determine its adaptability to various climates, its feeding value and its effect upon the soil, have shown it to be an important farm crop.

It thrives in great extremes of temperature and grows readily in soils too poor for alfalfa and where other grasses failed to produce a crop.

Before condemning it, consider the following facts:



Wonderful Growth of Nodules, Containing the Nitrogen Gathering Bacteria, on Upper Portion of Sweet Clover Root

Advantages of Sweet Clover

1. It is not a weed.
2. Like alfalfa, it is rich in protein.
3. Will not bloat cattle or sheep.
4. Is equal to alfalfa for pasture.
5. Is a great milk producer.
6. Furnishes early spring pasture.
7. Contains more protein than red clover.
8. Fits well in crop rotation.
9. Is a great soil enriching crop.
10. Is better than any of the common clovers as a green manure crop.
11. Is a valuable plant for honey bees.
12. Prepares the soil for alfalfa.
13. Roots are soft and give no trouble in plowing.
14. Its roots, being tender, become inoculated more readily than alfalfa.
15. Never damages cultivated crops.
16. Its roots decay rapidly, adding much nitrogen and humus to the soil.
17. Grows and will produce a crop in all parts of the United States.

18. Seeds freely in both humid and dry sections.
19. Prevents erosion of the soil.
20. Will grow under conditions where clover and alfalfa fail:
    (a) On land too low, too wet, or alkali for alfalfa.
    (b) On land too hard and compact for alfalfa.
    (c) On soil too poor for alfalfa, especially where there is lime.

Disadvantages

1. If neglected and allowed to grow too large, stems become hard and bitter and leaves fall off.

2. Frequently stock do not eat it readily until they become accustomed to it.

Sweet clover needs a firm, solid seedbed. The ground should not be loose. Many failures in growing it on cultivated land have been due to a loose, mellow seedbed.

If it is to be used for hay it should be cut when 18 or 20 inches high and before it blossoms.

Don't plow or sow deep. Don't cut low in mowing; cut at least six inches above the ground. Don't have the sub-soil loose. Don't be afraid to sow sweet clover. Don't plant the yellow annual sweet clover. The white is better.

The best results are obtained by sowing in early spring as soon as the ground is dry and warm enough to put in condition for a good shallow seedbed.

THE GUIDING HAND OF WOMAN

NINETY per cent of American food passes through the hands of women. In no other field do small things, when multiplied by 100,000,000 people, count for so much. The guiding hand of woman in the home can alone control this matter.

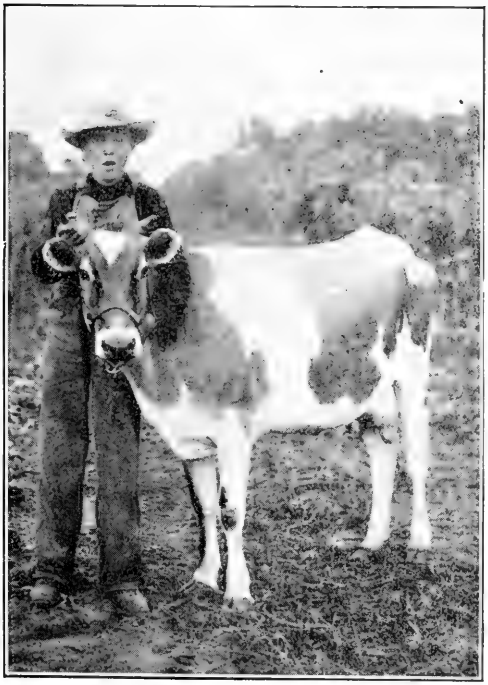
A single pound of bread saved weekly for each person will increase our export surplus of wheat 100,000,000 bushels, and an average saving of 2 cents on each meal every day for each person will save to the nation for war purposes $2,000,000,000 per annum.

Food conservation is not alone a war question. The high prices, which are bearing so hardly on the poor and the more moderate wage earners in our country, are partially due to the shortage of supplies in the world's market and the saving which can be made will lessen the prices to those of our own people who must be our first solicitude.—Extracts from Hoover Bulletin.

BANKERS SHOULD PROMOTE RAISING OF LIVE STOCK

AN educational extension department should be a portion of the activities of every banking institution. Especially is this true of the small town bank. This should be in charge of a trained and experienced agriculturist, who should act as a farm adviser.

He should keep in close touch with the farmers, and in every way encourage the growing of live stock. He should point out the increased profits that come from marketing grain and forage crops in the form of beef, pork, mutton or dairy products, and the importance of maintaining soil fertility. He should assist in organizing stock improvement associations in the community; help the farmers in marketing their stock in carload lots; take a leading part in the organization of agricultural fairs and exhibits, live stock shows and Chautauquas; be instrumental in forming calf, pig, and poultry clubs and in interesting the boys and girls in raising live stock. And finally he could prove of assistance in the procuring of farm loans for financing those who desire to follow agricultural pursuits.



Owes His Start to a Bank—Member of a Bank Calf Club Is Proud of His Heifer.

Not only in times of war, but in times of peace as well, a maximum production of food is a world-wide demand and this can be accomplished only by maintaining the fertility of the soil.

The millions of acres of worn-out land are testimony to the need of conserving soil fertility through diversified farming, the growing of legume crops, the raising of live stock and the placing of the manure back on the land.

Live stock utilizes cheap roughage, such as corn stover, fodder and straw, which usually go to waste. Feeding the crops to live stock and returning the manure to the land maintains the supply of nitrogen and other plant-food elements.

This not only means more prosperity for the farmers and the community but it means more food.

In the United States there are over 30,000 banks. What a tremendous educational influence these financial institutions would be if each bank was an educational center for the community! Bankers are usually community leaders. The opportunities are great for every banker to make himself a teacher, and a missionary for the physical, financial, social well-being of the people of his community.

A GARDEN FOR EVERY HOME

Every home should have a garden. Have fruit trees and berry bushes around the sides and ends of the garden. Have the garden long so that you can cultivate it with a horse or mule. Don't just have a little square patch that you will neglect to care for. Cultivate the garden the same as the good farmer cultivates his crops. It will pay you a mighty sight better for the work done in it. The same amount of hoeing necessary to keep the other crops clean will keep the garden clean.

Select early and late cabbage, carrots, turnips, sweet corn, etc. Radishes, lettuce and some of the short-lived vegetables can be planted at different seasons, so that there will be a continuous supply. When these vegetables mature, **can the surplus for future use.** A good garden means one-third of the living.

If you do not know the best varieties to plant, write the professor of horticulture at your Agricultural College. He doubtless will furnish you a list well adapted to your locality.

INCREASE THE YIELD OF GRAIN

IF the food demands of the United States, our Allies, and of the neutral nations are to be met, it will be necessary, according to the estimate of the U. S. Department of Agriculture, to plant in this country for 1918 about 67,700,000 acres of wheat, 5,600,000 acres of rye, 7,900,000 acres of barley, 45,200,000 acres of oats, and 111,500,000 acres of corn. This is an increase of nearly 5 per cent over the immense acreage of these cereals in 1917 and 22 per cent over the average annual acreage during the past 10 years.

If We Cannot Serve Our Country on the Battle Field, We Can Serve It in the Harvest Field.

This demand for increased acreage deserves the serious thought and patriotic action of every farmer in the United States.

The extraordinarily high prices for all kinds of cereals should be a sufficient incentive.

The question of who wins this war is the question of who can endure the longer. It is largely a question of food. The farmer who works overtime and the consumer who economizes in consumption are using a positive and sure weapon to decide the conflict.

Wheat is a very important crop. American grown rye plays a minor part in bread making since our export possibilities are only 20,000,000. In making bread the other cereals are used in Europe at present only for mixing with wheat, and a certain amount of wheat is needed.

Normally we can spare Europe from 40,000,000 to 70,000,000 bushels of wheat and about 200,000,000 bushels of other grains, but that part of Europe which looks to us for foods is short 500,000,000 bushels of wheat. We must at least spare her 200,000,000 bushels and 500,000,000 bushels of other grains.

With the government guarantee of $2 for wheat at the terminal markets we should not hesitate to increase our acreage. If we grew a billion bushel crop there would be great need of every pound of it.

If peace would come the $2 guarantee would still be good even though there would be no foreign market for at least 400,000,000 bushels of this wheat.

We should not hesitate to plant every spare acre to grain this year. To do so will be both patriotic and profitable.

Increase Yields by Conserving Humus. Corn Stalks Produce Humus, But Not if They Are Burned

KITCHEN BACKBONE OF FARM

A FARM, like an army, breaks down when its commissary or sanitary department breaks down. The slender link of a woman's endurance limits the strength of the chain of farm living. And this link has not been strengthened in the whole march of our boasted civilization. The eyes of the nation are fixed on our farmers just as they were on our fighting men at the time of the Spanish war. The brass bands did not march at the head of the sanitary and commissary departments, and the result is history. It is the same with our farm living today. The sanitary and commissary departments have made no advance since the day of our great grandfathers. The substitution of the stove for the open fireplace is the last, in fact, the only, real inprovement in the equipment of the farm home which has been generally adopted.

Courtesy Farm & Fireside.

Kitchen in Model Farm Home—The Farmer Should See That His Wife Has Conveniences Equal to Those He Demands for Himself.

Compare this record with that of equipment for the man's work on the farm. Reapers and mowers, riding plows and cultivators, planters and seeders, hay rakes and loaders, feed grinders and wood saws, hay forks and corn elevators, corn binders, manure spreaders, litter carriers, ensilage and fodder cutters, threshing machines, hay balers and corn shellers, milking machines, windmills and pumps, stationary and portable engines and tractors, and literally hundreds of other machines for special crops and conditions.

Nor is this all. National and state governments, colleges, universities, and experiment stations have employed an enormous corps of trained experts and scientists to study soils, seeds, insects, fungi, birds and beasts; to scour the face of the earth for new grains and grasses, plants and animals; to study feeds and feeding, breeds and breeding; to design barns, dairies, granaries, corn cribs and silos. All this is good, but only half effective, because

the farm house has not been brought up to the same advanced line. A city man living close to a restaurant and a laundry may class his wife as a luxury. A farmer cannot. When his kitchen breaks down his farm breaks down. The kitchen organization must come first in time and importance.

The work of the farmer's wife is not only hard and exhausting it is continuous and practically unvarying. The seasonal changes which relieve the monotony of the outdoor work on the farm do not penetrate to the kitchen. There is the same lugging of water and slops, the washing and ironing, the sweeping and scrubbing, the filling of lamps and making of beds, the sewing and mending, the care of the children, and the everlasting three meals a day. No other class has derived so little from modern progress and invention, in comfort and luxury, in relief from grinding toil, as the farmer's wife. This is a neglect for which the whole nation is paying an awful price in the high cost of living.—X. Caverno.

Wife Saver and Life Saver

The engine in the farm home makes possible the combination of a number of labor-saving facilities.

Some of these may be classed as luxuries, but most of them are conveniences which the modern farmer can well afford, and they will greatly relieve the burden of household work for the farm wife.

By having a power house for the engine, a line shaft can be put in connecting all the machinery with pulleys, and run all at the same time with the one engine, or run each one separately.

The engine is becoming practically a jack-of-all-trades. It will do away with the weekly turmoil of the wash tub, saving the wife much work and many backaches. It will do the churning, separate the cream, pump the water, grind the feed, saw the wood, and run the vacuum cleaner. It will also furnish power to operate a home lighting plant. It does all these things quickly, easily, and with but little expense. The new types of engines suitable for use in the home are made to burn either gasoline or kerosene. The dealer can help by introducing these labor-saving machines in every home.

THE COUNTY AGENT OR FARM ADVISOR

THE County Agent is the most direct medium of communication between the educational forces of the country and the crop producer.

The opportunities of the County Agent to perform a great service for his nation are many, and he will accomplish much if he has initiative, patience and diplomacy.

Many of the County Agents have already made agricultural surveys of their counties. They know the possibilities of the soil and the crops which can be most profitably and most abund-

A County Agent Showing Nodules on an Alfalfa Root.

antly produced. With the nation exerting every effort to increase its food supply, the importance of having a government representative in close touch with agricultural conditions in every county must be evident to all.

County Agent Can Do Much

The County Agent can organize community team work in order that all the resources of town and country may be utilized. He can enlist the services of local merchants and business organizations in supplying labor for the farms. He can co-operate with

bankers and commercial clubs to promote better farming methods. He can keep in touch with all the farmers of his county and with many in adjoining counties. To him all farms should, in a way, be experimental stations for demonstrating the variety of crops or the methods of farming best adapted to his locality. What he learns in this way he should communicate to all the farmers, so that they may profit by the experience of others.

The success of the County Agent will be measured by his ability in organization—his ability to enlist others in the work of advancing community and agricultural interests. If he attempts, without the help of others, to do all the things that should be done, he will fail. Teachers, merchants, school children, editors, ministers must help.

Needs Help of Leaders

The County Agent should know who of the people in his county are leaders—who are the men and women who do things or who want to do things. Some will be community builders, others will be lecturers, others will be writers of force and conviction. All of these he should rally to his support.

For each person there can be found the place in which he will best fit into the general plan of community development. The County Agent who can marshal the greatest force behind him and use each of them to the greatest possible public advantage, will achieve the largest degree of success.

Boys' and girls' pig clubs, calf clubs, corn clubs, and poultry clubs should be organized. Business men and farmers should be frequently brought together for a free discussion of agricultural and commercial ideas. Home and vacant lot gardens for the towns and larger gardens for the farms should be encouraged, and canning and drying clubs should be organized that none of the food grown shall go to waste.

Lectures should be held in school houses and churches, and charts and slides used to emphasize the facts presented.

Community team work in the production and conservation of food is a greater necessity today than it ever has been before, and there are thousands of communities in which the people are anxious to work together for the good of the nation. What the people want is a leader. **That leader should be the County Agent.**

WHAT A FARMER'S CLUB DID

IN THE development of the natural resources of every state nothing plays a more important part than Community Clubs. Better homes, better schools, better churches, and better people are possible only through unselfish service and earnest co-operation.

This service and co-operation are developed by active and efficient Community Clubs.

The life of a community organization will depend upon the members having something worth while to do, something to accomplish that demands co-operative effort. Every com-

Farmers' Club Holding an Alfalfa Meeting

munity should do something to improve farming conditions, to improve the schools, to build good roads, to improve sanitary conditions, to make better homes. This is a truth which we should understand and appreciate.

It is the doing of common things and doing them well that has the most lasting and beneficial results. This fact has been repeatedly demonstrated in many communities in all parts of the country, and among the most recent is the unique and important work accomplished by the Fairview Social Club of Black Earth, Wisconsin.

A Live Wire Club

This club is only two years old, having been organized in May, 1916, for the purpose of promoting social activities and the discussion of farm problems. It has 43 active and 16

honorary members, and so great is the co-operative spirit among them that a large majority attend every meeting.

Not only has the club held many social gatherings, but it has conducted a number of projects of much benefit to the farmers and the community. One of these was a crow and hawk hunt, another a June bug hunt.

As the result of the former, the community was practically freed of crows and great damage to the corn crop prevented.

The hunt for June bugs lasted a month. Two teams, each under the command of a captain, were organized. Each captain kept a record of the number of bugs caught by the members of his team, and at the conclusion of the contest the team which had the less number to its credit furnished supper to the other team.

The hours during which the largest number of bugs were captured was between 10 p. m. and midnight, as by that time the bugs had alighted upon trees to feed, and it was easy to shake them out onto canvas stretched beneath the branches. Walnut, butternut, and hickorynut trees seemed to be their favorite feeding places.

A total of 62,346 bugs were caught. If allowed to live, these bugs would have produced 4,987,680 grubs, which would have done enormous damage to growing crops.

THE HOME

The home—that institution for which and by which all other institutions in the world exist.

Put the same intelligence and training into the making of the home that is given to great business enterprises.

The home is producing the future men and women—the greatest crop of all.

BOYS CAN HELP WIN THE WAR

THE shortage of farm labor is the greatest we ever have known, and it will likely increase as the war progresses.

But in spite of the labor problem, farm acreage under cultivation must not be decreased; food production must be kept up to the maximum.

We must win this war, and we cannot win it unless we produce every possible pound of foodstuffs. Every acre of land that is busy is working for us; every idle acre strikes a blow at Liberty.

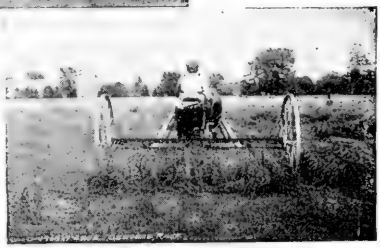
But farmers cannot cultivate all their land unless they have sufficient labor. Farm machines will make up for some of the shortage, but not all. Human labor must be recruited from some source.

Uncle Sam Appeals to Boys

In this great emergency, the government is appealing to the schoolboys of America—to the great army of strong, alert, active, energetic youngsters between the ages of 16 and 21 to enlist in the U. S. Boys' Working Reserve.

These young men are filled with the patriotic spirit of the nation. They are under the legal age for conscription in the army, but they want to do all they can to help their older brothers win the war. They cannot fight, but they can help produce food to feed the fighters.

In order to encourage these boys to work on farms this summer and help make up the shortage of labor, the U. S. Boys' Working Reserve has



Young Men Are Filled With Patriotic Spirit—They Can Help Produce Food for the Fighters.

been organized under the direction of the Department of Labor.

By applying to his federal state director, whose name will be furnished by the State Council of Defense, any boy between 16 and 21 can enlist in the Reserve, in the agricultural, industrial or vocational units. Boys are particularly urged to join the agricultural unit that they may be detailed to help out the farmers.

Every Boy's Opportunity

Members of the Reserve are given federal recognition but are not liable to military duty.

This is every boy's opportunity to have an important part in making history. Their services will be as important as though they were in the army or navy. The work will be hard but healthy and in after years, when liberty has been forever established throughout the world, they will be proud to show their badges of honor given them by the United States as evidence of their faithful and loyal service in the great struggle.

Every boy should join the Reserve and give his best to his country in this great hour of need. Every farmer should be kind and patient with the boy who is doing his best to help him. Be careful not to work him too long hours. Look carefully after his physical and moral welfare and his health.

The Meaning of Success

To be successful is not merely to be rich in money. There are many men who have not much of this world's goods and yet are more successful than some others who have only hoarded their gold without contributing to the welfare of the community in which they live.

MEETING THE COUNTRY'S CALL

THE Farmers Dispatch, published at St. Paul, Minn., recently conducted what it appropriately termed "My Utmost" contest, offering numerous prizes for the best examples of what had been done by farmers and their wives to increase production and conservation of food. Intense interest in the contest was manifested, more than 800 articles having been submitted.

With the consent of Mr. S. E. Elliott, editor of the Farmers Dispatch, we are enabled to reproduce two of the prize-winning articles as examples of what any farmer and farmer's wife can do to assist in meeting the food requirements of the nation.

The first prize was awarded to Mr. John L. Kubik, of Medford, Wis., who gave a splendid demonstration of how, on even a small farm and under adverse circumstances, one little bit of extra production made possible another little bit of extra production and all resulted in greater conservation and production, which is the general plan of farming so greatly needed in the United States during the present war crisis, and which can be duplicated by any farmer.

The third prize was awarded to Mrs. Marie O'Brien, of Malta, Mont., who gives us an example, not only of increasing production by carefully guarding those things which make continuous production possible, but of intelligent and patriotic food conservation as well. The two articles follow:

What One Farmer Did to Help

Here is the wonderful story of achievement written by John L. Kubik, Medford, Wis.:

Our beloved country has undertaken a task of tremendous importance to all mankind—the crushing of kaiserism. To bring this issue to a successful conclusion, every one of the 100,000,000 people living in this republic should help in the way of food production and saving, for food and money, we all realize, will win the war.

In order that I could do my utmost in this respect, I first increased the acreage I use for planting crops. This was not an easy problem, because I had only 25 acres of land available for cultivation, while the rest of my 80 is cut-over land with stumps and brush on it.

In spite of this difficulty, I went to work early last springs clearing and plowing one acre for pasture. On this one acre I seeded oats which, thanks to favorable weather, brought an

excellent crop. The oats thus obtained and my barley crop enabled me to increase my flock of chickens two-fold; I also was able to raise an additional hog.

The stumps split by discharging dynamite, furnished an excellent fuel for my heating stoves, besides making it possible for me to sell six cords of hard wood, the proceeds of which almost paid for the dynamite.

That I could have grain to meet my needs for bread, I seeded rye. The rye I harvested was ground into flour, and the middlings that I obtained as by-product replaced some of the grain feed I am buying every year for my cows. The rye straw, being used for bedding, increases the output of barnyard manure.

Anticipating the shortage of sugar, I planted sugar beets, from which, in the fall, I made eight gallons of syrup. Some of this syrup I used in 50 jars of fruit preserves. However, a large amount is being used in my kitchen, especially in preparing a meal I call carrot stew.

The crops of potatoes, peas, carrots, cabbage, beans and cucumbers have been doubled.

I have tested each of the cows in my herd and found that two proved a losing proposition. I immediately sold them and bought another two that bring profit.

I had a great crop of hay, it being made possible through liberal application of manure. By making two tons of marsh hay, all of which I cut by hand along the track of a railroad and stored in my barn, the day after threshing, all of my oat and barley straw, which I am now feeding to cattle, I have been able to add to my stock one cow and two steers.

I have harvested about 15 tons of beets. This provides succulent feed for my cows during the winter months, thereby increasing the production of butterfat. I think beets are an excellent substitute for silage.

I also have gathered about two bushels of nuts, which are now served at meals as dessert.

After my farm work was done I stored all my machinery in a shed in order to save it from rust.

Strict economy is being pursued in the farm and household management. Wheat bread is found on my table only on holidays; meat three times a week.

In addition, I must say that I have bought government bonds, and have joined the Red Cross and a patriotic society.

A Commendable Example of Thrift

Mrs. Marie O'Brien, Malta, Mont., gave another fine example of what can be done by anyone to help win the war. She wrote:

In order to help our government win the war we are keeping our female stock whenever it is possible. Moreover, we see that there is an increase each year. We try to raise enough feed for all stock.

Instead of feeding wheat, as many do, we sell all except the best grade, which is kept for seed, and the feed wheat is fed to poultry.

Every Family Should Have a Vegetable Garden.

We grow sugar cane, Kafir corn, feterita, alfalfa, sunflowers and root crops to feed the pigs, calves and poultry.

We have a flock of 40 Buff Wyandottes and expect to keep 100 next year, as we will have larger quarters. We raised a nice bunch of turkeys last year and kept all the hens for egg production this spring. Next year I intend to add geese and let the boys try their hand at raising Belgian hares.

As soon as we can arrange for it we will keep a few sheep, as their products are needed so much. We take good care of all our possessions, believing an ounce of prevention is worth a pound of cure.

We raise all the meat used on the table and sell the surplus. We never slaughter anything until it has reached maturity.

It wasn't hard for me to "Hooverize" in the kitchen, as I have always practiced the strictest economy, but I adopted Hoover's program as soon as I read about it. For breakfast we use rolled oats or barley or raised pancakes of buckwheat or cornmeal. We make corn bread often and I haven't made a pie or iced a cake since last summer. We serve fruit as sauce, sweetened with syrup and spices. We use syrup in cookies or cake also. And we have puddings, such as corn starch, tapioca or "hasty" pudding. We save the four staples—wheat, meat, sugar and fats—as much as possible.

We raise a big garden each year and can everything perishable, even greens and carrots.

THRIFT—THE PERFECT POSSESSION

By Edgar W. Cooley

THERE is but one Perfect Possession.

Some of us have Wealth; others possess Genius, or Knowledge, or Accomplishment. Many of us enjoy Health and Love.

But the one Perfect Possession is greater than any of these. It is the power behind Accomplishment, the foundation of Wealth, the preserver of Love. It surrounds Genius with opportunity, sets Knowledge to work, and creates Health through right living.

It is within the reach of all; is imperishable and unchanging.

It is the corner stone of Character, the first letter in the alphabet of Virtue. It is the science of turning waste into profit; the art of making a living. It is the creator of Efficiency; the talent of applying good management to little things; the mint in which energy is coined into progress.

It is the gateway to success; the credentials of good citizenship; the passport to prosperity. It plants a smile on the face of Childhood, a song in the heart of Youth, and glory in the silvery hair of Age. It tempers thought with tenderness, clothes action in good will, crowns labor with love, and broadens endeavor into helpful service.

It is Thrift.

LET BOYS AND GIRLS HELP PLAN FARM WORK

NOT long ago an Iowa farmer was heard to say: "In planning my farm work for next year I am going to consult my wife and the children."

This ultimately proved to be the greatest idea this farmer ever had.

If every farmer will take the family into his confidence he will solve many perplexing problems. Often the boys can give their fathers helpful ideas. You will be surprised at the way Mother and the girls can help plan the work

of the farm and the household so that there will be full co-operation among all members of the family.

Let the boys and girls feel that they have an interest in the farm—that they are not working simply for their "keep." When they feel that they have responsibility, that the success of the farm depends on them as well as upon "Pa" and "Ma," they will put forth their best efforts.

Co-partnership in the management and operation of the farm will instill within them the pride of ownership; will teach them to think in terms of action and results; in terms of accomplishment.

See that your children own something—a calf, a pig, or a lamb. Let the ownership be permanent, not temporary; real, not imaginary. Don't let it be Willie's pig and Pa's hog. Let it be Willie's hog and give him the price of the hog when it is sold. This will give motive to his work, stimulate interest, develop initiative, train him in terms of business.

Co-partnership in field and home management, responsibility, ownership—these will keep the boys and girls on the farm, make them successful men and women, quick to grasp opportunity, able to compete with the world's workers in the accomplishment of the world's greatest work, that of agriculture.

CORN AND ALFALFA BASIS OF LIVE STOCK GROWING

CORN and alfalfa form the basis of successful live stock growing. No other combination of feeds is so economical in the production of beef, pork, dairy and poultry products.

Alone, neither will give the best results; together, they form the best of balanced rations for growing animals and fowls.

Corn, oats, rye, etc., furnish carbohydrates, but animals need protein also. Corn is rich in starch and sugar—fat producing substances. But it is especially deficient in protein, which makes bone, muscle and frame work for the growing body.

Alfalfa saves the large waste of starch which always results when corn is fed alone. Its feed value per acre is double that of clover or any other forage crop. When we grow alfalfa, we grow protein on our own farms more economically than we can buy it in feed stuffs. Alfalfa feeds the soil and enables us to grow larger crops of corn, oats or other grains.

An acre of alfalfa is worth more on the market than an acre of any other crop. It is worth still more when fed to live stock.

Alfalfa is a sure crop because it is not dependent on the rain. It is a subsoiler; its long roots draw moisture and sustenance from soil much deeper than that which we generally farm. It gives humus to the soil—builds up soil fertility. Corn and alfalfa, foundation of American agriculture, king and queen of all the crops—hope of the world.

THE HOG'S PART IN THE WAR

IN THIS emergency we should not underestimate the importance of the hog. On 2,000,000 farms there are no hogs. On any farm where there are no hogs the farmer should buy a brood sow immediately. He should feed the male pigs when he gets them, and grow the females to be bred. He does not have to buy many sows to start hog raising.

We do not speak in favor of the hog to the exclusion of other classes of stock; but the hog is in first position, and cannot be replaced. In the grains wheat and corn will win the war; in meat animals, the conqueror is the hog.

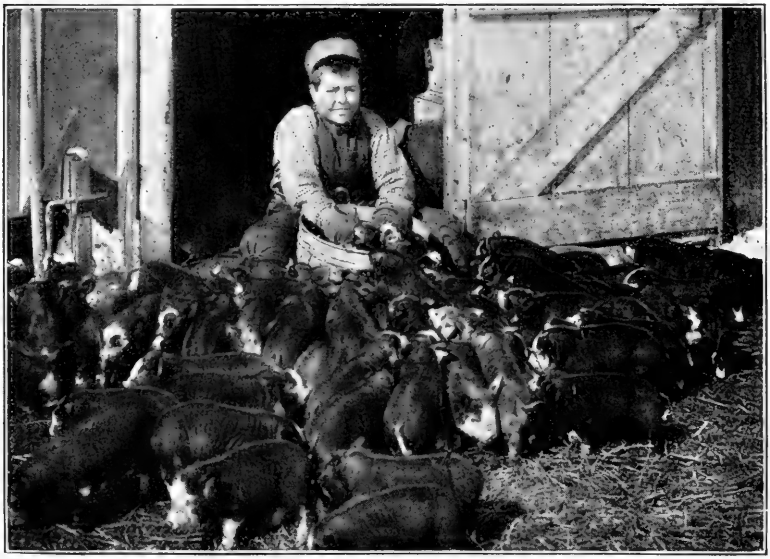


Photo courtesy Breeders' Gazette.

Doing His Share to Feed the Fighters.

We have just had a great live stock show at Chicago, and the champion steer weighed 1,610 pounds at 29 months, or 870 days, old. The cow that had the champion steer for a calf could have had another calf and be coming on with another since the champion calf was dropped. One steer weighing 1,600 pounds and another weighing 1,000 pounds would represent about all the meat the cow could show in market in two clear years and five months. But a sow that gave a litter of pigs when that champion steer was dropped could have given another litter that year and two more the following year. The four litters of pigs,

say eight to a litter, could all have grown and at 10 month sold each weigh 300 pounds. It would be no trick at all for one sow to market 9,000 pounds of meat on the hoof in 29 months, as against 2,600 pounds produced by the best cow in the world.

The hog is the most important animal in the present emergency. All the domestic animals are important, but at this time the hog speaks for himself and speaks loud. The cow generally gives us one calf; the sheep generally gives us one ewe; but the sow gives us a litter.

For the transportation of fresh meats, special cars are necessary. For the transportation of hams and bacon and lard, ordinary cars and ships are satisfactory. Hog meat can be shipped economically to the uttermost ends of the world. You do not have to can bacon and hams to get them to the soldiers in the trenches.

Right now is the emergency. We have to do what we can the quickest and the best way. It is not a question of profit; there is profit in all food and feedstuff. A farmer can raise 1,000 pounds of pork while he is raising 400 pounds of beef or mutton.

The hog is raised universally, and the number of hogs we can raise and fatten depends entirely upon the amount of feed we can produce. Farmers have taken a contract to produce the largest amount of meat in the shortest possible time, and that points directly to the hog. If you raise more pork than you ever did before, you are performing a great service to the country, even if you cure it and eat it on your own farm.

(By Philip H. Hale, Editor of the National Farmer and Stock Grower, St. Louis, Mo., for Extension Department International Harvester Company.)

PIG SKINS AND STEER HIDES BEST GRAIN SACKS ON THE FARM

Pig skins and steer hides are the best grain sacks a man can have on the farm. War does not keep a pig from making a hog of himself. War does not keep a cow from giving milk nor a hen from laying eggs.

The only safe way to continued success is to have something to sell every week in the year. It is the business of the farmer to see to it that his living is secured; that he does not depend directly upon one crop.

YOU DON'T NEED TO LOSE YOUR HOGS FROM CHOLERA

You can do two things to prevent losing your hogs from cholera:

1. **Keep the hog cholera germs away from your hogs.**
2. **If cholera gets into your herd, vaccinate at once, and you can save practically all your hogs. Act immediately. Do not delay, but get busy.**

How Cholera Germs Are Carried—Cholera germs are carried just the same as smallpox, measles, diphtheria, scarlet fever, or any other contagious disease germs. People, animals and birds, anything that walks on the ground and comes from a farm where the hogs have cholera, may bring cholera to your herd. Germs are carried:

1. **By owners of diseased hogs visiting well herds.**
2. **By owners of well herds visiting diseased herds.**
3. **By hog buyers, visitors and careless veterinarians.**
4. **By dogs, cats and other animals, that go from one farm to another.**
5. **By pigeons, crows, buzzards and other birds.**
6. **By pasturing well hogs with sick ones.**
7. **By purchasing new stock which has the disease, or carry the disease germs on their feet.**
8. **By streams or ditches running through infected premises.**
9. **By exchanging work and by threshers.**
10. **By the wheels of automobiles, wagons, buggies and farm tools.**

Precautions—If cholera is in your neighborhood, use the same precautions to keep from getting it on your farm as you would use if there were an epidemic of smallpox or scarlet fever.

If your neighbor's hogs have cholera, don't go to look at them. Don't let your neighbor come on your place. He may carry cholera germs on his shoes. Keep the hog buyer and all visitors away from the hog lot. Keep kerosene, crude oil or hog dip in the filthy hog wallow.

Use the same common sense preventive measures you would use to keep smallpox away from your family.

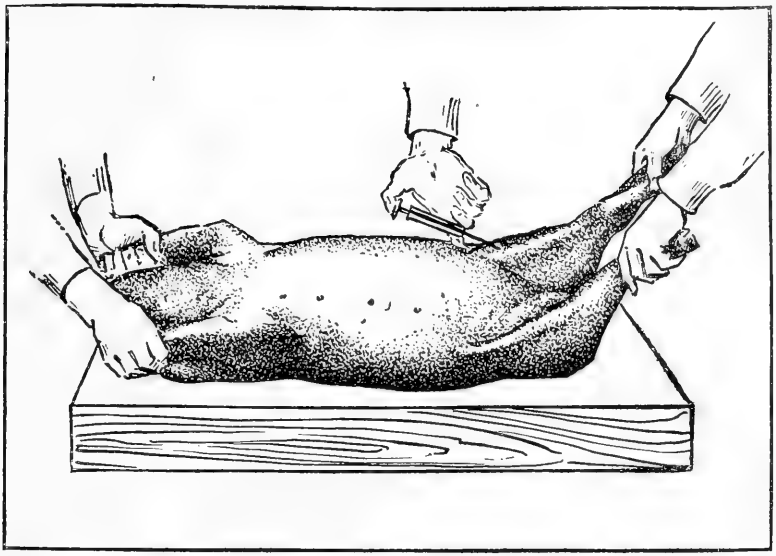
If Cholera Gets into Your Herd, Vaccinate at Once

If some of your hogs are sick, and you suspect that they have cholera, get busy. Determine absolutely, whether or not, they have cholera. If they have, vaccinate at once, and you can save practically all your herd.

Cholera Symptoms—Cholera causes fever, generally accompanied either by constipation of the bowels or by diarrhea. The hogs are "off feed," the odor of the urine is offensive, there is generally a discharge from the eyes, and, when they stand, there is a disposition to get their feet together, thus humping the back.

But a hog may have cholera several days before any of these symptoms are pronounced; then, too, these symptoms, or most of them, may accompany a bad case of worms, or inflammation of the lungs, or some other disease.

Kill the First Sick Hog—Determine at once whether or not a sick hog has the cholera. When it acts "dumpy," and refuses to eat, get a good veterinarian, kill the hog, and examine



Vaccinating in the flank. The hind leg is drawn back and the needle inserted so that the vaccine is deposited in the part of the flank that is loose when not stretched

the intestines, kidneys, glands, and other organs. A veterinarian can determine absolutely whether or not it is cholera.

Act Quickly—Save Your Hogs by Vaccination—If it is cholera, act quickly. Send at once for the vaccine. Do not take time to write for it. Have your veterinarian or your banker wire to your State Agricultural College or to any firm handling cholera serum.

State the number of hogs you wish to vaccinate, and their average weight. This is necessary, in order that the college, or laboratory management, may know just how much vaccine to send you.

Employ Veterinarian to Vaccinate Hogs—Do not attempt to vaccinate the hogs yourself. You would not think of vaccinating a person for smallpox or giving toxin for diphtheria. Vaccinating for hog cholera is exactly the same kind of a proposition. Don't try to do it yourself. Get a veterinarian who understands the business.

Keep the vaccine cool, and use it just as soon as possible after it comes.

Lose no time. The vaccine loses its effectiveness rapidly if allowed to stand where it is warm. The longer you wait, the sicker your hogs are getting, and the less chance you have of saving them.

When to Vaccinate—Do not vaccinate until your first hog is taken with cholera, or until cholera is so close to you that you are certain your hogs will get it.

In regions where hogs run together on range pasture, vaccinate as soon as cholera appears.

Vaccinate with Serum Only—Ordinarily, you should vaccinate with serum only.

Serum is taken from the blood of a hog that has been exposed to cholera, has had the disease just as severely as he can be made to have it, and has recovered from it.

Serum contains no live cholera germs, but has in it certain elements that combat cholera germs, and if given before the hogs get sick very few of them die.

If your hogs are already sick with cholera, give them a double dose of serum. This will save about half of them.

The serum treatment is effective only from four to six weeks. At the end of this time your hogs must be vaccinated again, if there is still danger of their being exposed to cholera.

Vaccinating with serum only is called the "Serum Treatment" or "Single Treatment." In practically all cases, this is the only method that should be used.

Simultaneous or Double Treatment—In rare cases it may seem advisable to vaccinate with virus at the same time you vaccinate with serum. The virus is injected in one flank, and the serum injected in the neck or other flank. This is called the "Simultaneous or Double Treatment."

Virus is taken from the blood of a hog while he is sick with cholera; therefore it is full of live cholera germs.

The object of using virus is to give the hogs cholera. The serum given at the same time fights and checks the cholera germs which the virus contains. Very few of the hogs die, and not many are real sick.

ANY FARMER CAN HAVE PIGS AND POULTRY

IT is very easy for a poor man to get into the hog or poultry business, for it requires little capital. In Arkansas, Mississippi or Tennessee a sow will raise two litters of pigs a year. In the Corn Belt from which the meats are shipped into the South the average sow raises but one litter a year.

In the South the farmer can grow all his protein feeds—cowpeas, soy beans, peanuts, lespedeza, burr clover, crimson clover, and in most places some alfalfa. These are all good protein feeds for hogs. Farmers raising 50 hogs a year should have a five-acre pasture for them, and opening from it three or four small fields, into which he can turn the hogs.

THE SCRUB COW DOES NOT PAY FOR HER BOARD

THE scrub cow, the "no-purpose" cow, is a tax on time and labor, a tax on the resources of the nation. There are millions of such cows in America. Get rid of the scrub. The good dairy cow is a real producer. She produces human food with greater economy than any other class of live stock—hogs, sheep or poultry.

The cheapest and most efficient means of improvement must come through breeding, selection, feed and care.

Many farmers feed the same amount of grain to each cow, regardless of her size and record of production. They should keep a daily record of the amount of milk given by each cow, have her milk tested from time to time, and then feed her a balanced ration to maintain the production, or to increase it, if possible.

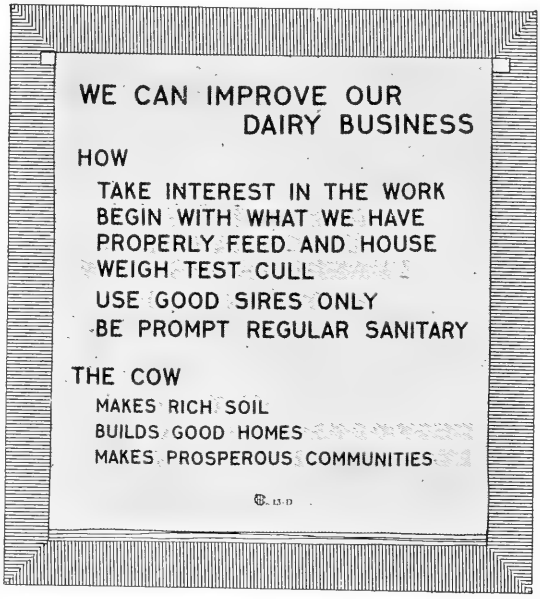
The Profit From This Scrub Cow Was Only $2.77 in One Year.

On the average farm we are very apt to find three classes of cows in the same herd. We find cows which use their feed for the production of milk; cows which use their feed for the production of beef, and cows which produce neither beef nor milk at a profit. All unprofitable cows must be culled from the dairy herds if the dairy is to be a paying investment.

Another mistake made by many farmers is lack of feed and care of the cow before freshening. A cow that is wintered poorly with nothing but roughage, will be thin in flesh in the spring. When turned out on spring pasture, she will first put on flesh, instead of increasing her flow of milk. That is only complying with nature's law. By the time the cow has built her body tissue, and is ready to give milk, it is fly season, and this is followed by a short fall feed, and the cow has been under a handicap the whole season. The cow that freshens in the fall has a great many advantages over the cow freshening in the spring, because she is in better condition.

WE CAN IMPROVE OUR DAIRY BUSINESS

THE first and most important thing leading to success in the dairy business is that the farmer and all his help like the business—take an interest in the work. The cows must be controlled by kindness and not by the ancient method of foot, club and milkstool.



The next important thing is the keeping of proper records, not only of the receipts and expenditures, but also the annual profit from each individual cow. This may be done by weighing the milk, if not daily, at least once a week, and from these records the total for each week, month or year can easily be obtained. By testing the milk once a month you can easily get the value of the milk produced by each cow.

Many farmers are keeping too many boarder cows and this does not pay. The first year we weighed the milk from our herd, we set the standard that every cow under favorable conditions and proper feed must produce 6,000 pounds during the year. Any cow not producing 6,000 pounds of milk was to be sold. At the close of the first year, out of 35 cows we found 13 boarders, and promptly sold them. At the close of the second year we did not have a single boarder, and the cows produced from 6,000 to 12,000 pounds of milk each during the year.

It pays to keep a pure-bred sire at the head of your herd. Raise the calves from your best cows. Do not starve these calves, but feed them so they will grow into good big heifers. Breed them so they will be at least 2½ years old when fresh. By observing these conditions, you will be surprised at the increase of your milk or cream check.

Grow all the alfalfa hay needed. Have a summer silo as well as one for winter use. Buy only the mill feeds rich in protein, such as cotton seed meal and oil meal. Grow the carbohydrates in corn and barley. Weigh and test the milk from each cow. Keep a record of feed. In short, know what each cow is doing. Grow your milch cows. Use the best bred bull you can possibly afford to buy. Take an active part in all local farmers' organizations.—Charles H. Benton, Valparaiso, Indiana.

THE WORLD NEEDS MORE LIVESTOCK

ESTIMATES published by the United States Food Administration show that there are 115,000,000 less meat animals in the world today than there were in the year preceding the beginning of the war. While the increase in cattle in the United States was 7,090,000, the total world decrease was 28,080,000. Sheep decreased 3,000,000 in the United States and 54,500,000 in the world. Hogs have increased 6,275,000 in the United States, but throughout the world their number has decreased 32,425,000.

The close of the war will find Europe almost barren of meat and dairy animals, and with an annual production of meat and dairy products decreased to a startling extent.

If we would profit by this opportunity, we must grasp the enormous world demand for meat, dairy and breeding animals and meat and dairy products which must continue for many years after peace is proclaimed.

It will take several years to sufficiently increase the herds and flocks of America, and those of us who have the right vision will begin at once to bring about this increase.

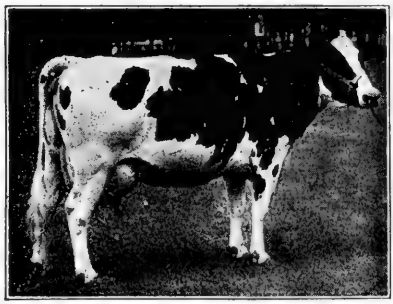
This opportunity is especially presented to the Southern states, where the cattle tick has prevented the successful raising of beef and dairy cattle.

If every Cotton Belt state would compel the use of the dipping vat by law and get rid of the tick, the natural advantages in the way of climate and long growing season, pasture lands, and adaptability of the soil to many crops would make the South the greatest beef and dairy section of the world.

ONE AVERAGE COW EQUAL TO FORTY SCRUB COWS

HERE is a striking example of the conditions which prevail on many farms in all sections of the country:

One average cow gave an annual profit of about $31.25, while the profit from 40 poor cows, in one whole year, was only $31—about the same as the profit received on the one cow. The one cow is the average of the ¼ best of 554 cows in 36 Illinois dairy herds, while the 40 cows are the average of the ¼ poorest of the same 554 cows in 36 Illinois dairy herds. The poor cows each gave a profit of ¼ of a cent every four days, or about 77 cents per cow profit for the whole year after deducting $30 a year for feed. Each one of the poor cows required on an average just as much feed and care as the average good cow which gave the owner, after deducting $38 per year for feed, a net profit of $31 a year; or, in other words, the 40 poor cows took 40 times as much feed and care as the one average cow. These calculations allow the skim milk, calf, and manure to pay for the labor and interest on the investment.



Dutchess Skylark Ormsby, the Minnesota Experiment Station cow that produced 27,761 pounds of milk containing 1,205 pounds of butter fat, in one year.

The lowest 139 cows (one-fourth of all) yielded an average of 133½ pounds of butter fat during the year, and the highest 139 cows produced an average of 301 pounds butter fat.

139 Poor Cows Made $107; 139 Good Cows, $4,000

The profit from the whole 139 poor cows was only $107, but the clear money from the best 139 cows amounted to more than $4,000. Herds of these two kinds would have to be kept in the following comparative numbers to produce exactly the same profit for the owner:

Good Cows	Poor Cows
1 Cow equals	41 Cows
15 Cows equal	612 Cows
25 Cows equal	1,021 Cows

Twenty-five cows of the better kind would return the dairyman a clear profit of $783 per year. They could be kept on an 80-acre farm; they would require a barn only 32 x 45 feet and a 100-ton silo, and the cows themselves at $70 per head would cost only $1,750.

Cows differ widely in their productive ability, and the only accurate measure of a cow's production is obtained by weighing and testing her milk. The most practical method is found in the co-operative cow testing association, since it furnishes a cheap, accurate method of testing.

Young Stock Will Have a Good Influence in Keeping the Boys on the Farm.

COW-TESTING ASSOCIATION WILL MAKE MONEY FOR YOU

TWO thousand, nine hundred and fifty yearly records from 177 different herds have been completed in the five cow-testing associations which have been organized in Iowa since 1909.

The average cow in the cow-testing association produced 217 pounds of butter fat per year at a net profit of $32.77, after paying for the feed at market prices less the cost of hauling.

If the 1,500,000 milch cows of Iowa produced as much butter fat per year as the average cow in the cow-testing associations, it would mean an increased production for the state of 115,500,000 pounds of butter fat per year, worth at 30 cents per pound, $34,650,000.

The most profitable cow returned her owner a net profit of $125, while the poorest cow lacked $25.92 of paying for her feed.

There were good cows and poor cows in every herd. The best cow from each herd returned an average of $55 net profit per year, while the poorest cow from each herd returned an average of but $15.12 net profit per year.

The most profitable herd netted its owner $71.22 per cow in one year, while the poorest herd was kept at a loss of 63 cents per cow.

Two hundred and fifteen, or 7 per cent, of the cows produced

Every Herd Has Good Cows and Poor Cows.

over 300 pounds of butter fat per year, while 321, or 11 per cent, were under 150 pounds. If all the yearly records had been as high as the 215 high ones, it would have meant an increased income of $91,470.

The cows fed silage produced 27 pounds more butter fat and $2.36 more net profit per year than those not fed silage.

The cows freshening in the fall produced 27 pounds more butter fat and returned $7 greater net profit per year than those freshening in the spring.

The average net income from cows in the cow-testing associations, from two to 10 years old, was $314.22, or nearly $35 per year.

Any member of a cow-testing association can raise the production of his herd to a yearly average of 300 pounds of butter fat within six or seven years if he will eliminate the unprofitable cows, save heifers from high producers, use a pure-bred sire from high producing ancestors and give more thought and attention to the feeding and care of the animals.

The cow-testing association is the most efficient and economical method of detecting the loafers in the herd. It puts dairying on a business basis, arouses the interest of the owner, his boys, and hired man in the cows, stirs up local pride by bringing the people of the community together to talk over their business, and helps to make farm work enjoyable and interesting.

WE MUST FEED OURSELVES

The World's Greatest Economic Problem Leads to the Farm

No country can become richer than its lands. From the soil come our food and clothing; all other human needs are subordinate to these. Food is the chief material concern of life—its production the most important occupation. In the hard school of experience we are slowly learning the lesson of real business economy—the greatest lesson of all time—that of feeding ourselves. Let us learn that lesson well.

TICK ERADICATION WILL AID WHOLE COUNTRY

THE cattle tick has taken toll from the southern farmers for 30 years. The tick is a great menace to the live stock business in the Cotton Belt states.

Nor is the damage to animal life done by this destructive blood sucking parasite confined to the South alone. Its injurious influence reaches into every northern state, and affects every breeder of live stock by preventing the shipment of pure-bred cattle from the North into tick-infested territory in the South. The tick has cost the South millions of dollars. It has cost the North millions also.

THE SEED TICK

After hatching it swings from spears of grass, and attaches itself upon passing cattle. If no cattle give it succor it will die of starvation in about four months in summer, but in winter it remains dormant. By taking advantage of this fact, it is possible to free a herd of the tick in a comparatively short time.

The tick kills our cattle; reduces the price; prevents shipping to good markets; prevents bringing in breeding stock; kills the cattle business. We can't afford to feed the cattle tick. The South needs more and better cattle; more home-produced beef, pork, mutton; more pastures; more green cover-crops; more vetch, cowpeas, velvet beans, and alfalfa. These things mean better farms, larger yields.

The quarantine line, although imaginary, fortifies the South against the live stock industry, encourages the one-crop system, kills diversified farming. Many live stock breeders of the northern states fail to see wherein they are affected by the cattle tick. Let these consider seriously that 10 southern states with over 3,000,000 farms, need more and better live stock which must eventually come from the northern part of the United States. The eradication of the cattle tick will open the live stock markets of the South to the northern breeder.

THE FEMALE TICK AND ITS EGGS

One tick is capable of laying 4,000 eggs within a week's time. In summer the eggs hatch in about three weeks, while in fall and winter they will lie dormant.

Under present conditions, the shipment of northern cattle into southern tick-infested territory is not a business proposition for the reason that the northern cattle become sick and in nearly all cases die of "bloody murrain" or "Texas fever."

The South is a natural cattle country. The climatic conditions are right for live stock growing. Pastures provide feed 10 months in the year in nearly all of the Cotton Belt states. Expensive barns are not essential. Grass is the native crop. God gave

Map of Eastern Half of United States. Black Shows Tick-Infested Region. The White Space below the Quarantine Line in 1906 Shows the Progress of Tick Eradication Since That Time

grass to the South. Why fight it to grow cotton to sell, to buy hay to feed a few work animals to grow more cotton? The one-crop system of cotton will ruin the South, as it has improverished land and people in the centuries past.

The tick is a blood-sucking parasite which fattens at the expense of the infested animal.

The milk cow infested with the tick gives at least 10 per cent less milk by reason of its parasites.

The tick injures the hides so they sell for one-half cent per pound less than similar hides not so affected.

Every year in every tick-infested county the loss of cattle from this pest would more than pay for the eradication of the tick.

The tick causes an unsanitary and unwholesome condition of the animals infected. Their products are unfit for human consumption.

The Cattle Tick Must Go

The South must get rid of the tick. Organized effort, work, determination, and the dipping vat will do it. Much has already been accomplished.

Eleven states are now working hard to eradicate the cattle tick. A large area has been freed, but the job is but one-third completed. Tennessee is entirely free. North and South Carolina are half free. Georgia and Florida are carrying on state-wide campaigns against the tick. Mississippi is clean.

Thousands of people in the southern states are looking forward to the time when the South will become a great live stock section, and the northern cattle grower should realize that the greater future for which the South is working holds much promise for him.

The day of the tickless South will usher in a new era of agricultural prosperity for all the states. When that day arrives the North and the South will work together for the common good of the entire country.

Where There Is No Vision the People Perish

Self-satisfaction and contentment with present conditions is a most dangerous factor in the life of an individual, a community or a nation. No great thing has ever been done without a vision.

It has been well said that there exist in every community the forces and the ability to solve that community's problems. They may be and frequently are undeveloped, but they are none the less there. These forces must be sought out, stimulated, trained, and developed, and then applied to problems of the community.

MISSISSIPPI DRIVES OUT THE TICK

Mississippi held a jollification to celebrate the glad tidings that her soil was at last free of cattle tick and that the quarantine had been lifted from the last county in the state. In the 12 years' war, 379,312 square miles have been reclaimed for healthy stock, and the campaign to reclaim the rest is now going forward with a rush. Opposition to the Federal program has almost ceased, and the south is looking forward to the day when she will be the chief stock raising belt of the United States.

Fig. 1
Mississippi in 1910—
Entire State Under Quarantine

Heaven grant that day comes quickly! There is need of it.

Twelve years ago, 728,562 square miles of the United States were infested by the fever-carrying cattle tick. This meant that over an area three and one-half times as great as France, cattle raising was under a handicap which made real success impossible. This region included some of the finest natural cattle country in the land, for the pest entered Texas across the Rio Grande and spread north and east till it covered most of the old South, where mild climate and good pasturage seem to invite the multiplication of herds.

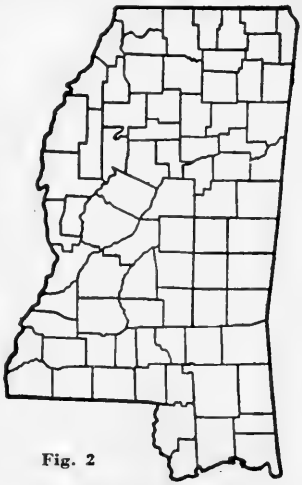


Fig. 2
Mississippi in 1918—
Quarantine Lifted; Tick Free

From that time to this, the United States Department of Agriculture has waged a steady fight against this scourge. Its weapons were poison and starvation; it poisoned the ticks by dipping the infected herds, and starved them by keeping stock out of infected pastures. But this required the cordial and intelligent co-operation of the farmers, and for a long time that co-operation was hard to secure. Indeed, there was active opposition in many cases; only a few years ago some dipping vats were blown up by dynamite in one of the rural counties of Mississippi.

A BUNCH OF SHEEP ON EVERY FARM WILL SOLVE PROBLEM OF WOOL SHORTAGE

NOT only is there a shortage of meat animals, but we are facing a serious shortage of wool. The solution of the wool problem is a bunch of sheep on every farm.

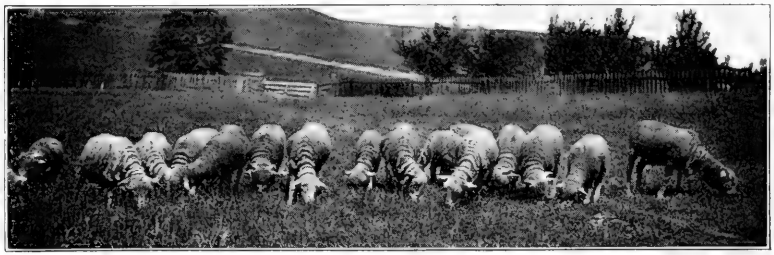
On every farm grass and weeds grow unmolested around buildings, along fences and roads, in corn or stubble fields. Weeds mean waste, but sheep or goats will turn weeds to good account.

No farm animal will respond more readily to care and feed than sheep. They require less attention than any other farm animal.

There is a world-wide shortage of sheep. The consumption of mutton is on the increase. The wool supply of the world is about exhausted. Fat lambs and wool bring fabulous prices, not solely on account of the war, but from a genuine demand of the people. There is wonderful interest in sheep-growing everywhere, but the demand for mutton and wool is so great that producers cannot meet it.

Expensive housing is unnecessary. Warm shelter is essential only when the lambs are very young. The roof is the important part of the sheep house. Keep the sheep dry during the winter season, and the fleece will provide the warmth. The requirements of sheep are simple, and their returns in fleece and fat lambs will surprise you. It is not necessary to tell farmers what a bunch of good ewes will add to the yearly profits of the farm. The market reports will tell that.

There is no better winter feed for the ewes than good silage and alfalfa hay. A good ewe will give more milk for the feed consumed than will the best dairy cow. Her lamb will do the



It Is Little Trouble to Raise Sheep. Keep Them Out of Mud, Give Them Frequent Change of Pasture and They Will Thrive.

milking, and by converting the milk into high priced mutton the farmer can get much more per 100 pounds for the ewe's milk than for the cow's, and in addition the ewe furnishes a fleece each year to sell.

Care should be taken not to feed sour or moldy silage to sheep. It has in many cases proved fatal.

Ewes raising lambs can be fed sweet silage up to four or five pounds per day after they have become accustomed to it. During the winter, before the lambs arrive, the ewes, if in good condition at the start, need only a light silage ration with alfalfa hay and corn fodder. Sometimes a feed of bright, not moldy, straw is relished by the ewes.

Sheep kept in muddy yards for long periods are almost sure to get sore feet. Give them dry footing, and there will be no trouble.

Sheep need a change of pasture. Turning them from one field into another furnishes this change and keeps the sheep healthy.

Raising Lambs Profitable

Select a bunch of rugged "mutton-shaped" ewes and mate them in the fall with a pure-bred sire of good form and fleece. Have the lambs born in March if there is plenty of good feed for the ewes and warm shelter for the lambs. Otherwise the lambs had better not arrive until later, when the weather is warmer and the ewes can get some grass to increase their flow of milk.

Some farmers have the lambs born in January or February and fatten them for earlier markets. This necessitates much care, abundant feed, and warm shelter, but it is a profitable business when well managed.

When lambs are 10 days old they will begin eating grain and hay. Fix a creep for them so they can have a trough apart from their mothers. Give them some wheat bran and cracked corn, and continue to feed them all they will eat while on pasture, if they are to be fattened and sold when three or four months old. The best time to sell the lambs is before they are one year old.

Some good farmers allow the ewes and lambs to graze during the summer with little or no grain, wean the lambs in August, and turn them into the standing corn. There is no place where a lamb will fatten faster than in a cornfield eating grass and weeds and weed seeds and the lower blades of corn.

Lambs should not be kept on old pastures that have been grazed by older sheep. There is danger of stomach worms. However, if tobacco dust or stems are kept before the sheep at all times they will not be troubled with internal parasites.

Three hundred farmers' reports give $4.69 as the average cost for keeping a ewe and lamb as against $11.15 as the average return in wool.

Nearly all good sheepmen keep a few of the best ewes each year to add to the ewe flock and take the place of the older and discarded ewes.

EVERY SOLDIER NEEDS WOOL FROM TWENTY SHEEP

"IF you keep 20 sheep you are outfitting a soldier who is risking his life for your freedom. If you have a flock of 200 sheep you will clothe 10 men who are fighting in France. And if you have no sheep you are failing to do all that is in your power to help win the war.

"Six farms out of every seven in the United States have no sheep.

"More than the entire wool production of the United States will be used for our armies. Where will we get the wool to make clothes for the civilians? Every ship is needed to transport men and supplies from America to Europe. Unless the necessity is extreme, we can't spare ships for long voyages to Australia, South Africa, and South America to get wool. Furthermore, those countries have not increased their production.

"The problem must be solved by the production of more sheep on farms throughout the United States. We must produce our wool at home instead of hauling it from the other side of the world. We can do it if you will put some sheep on your farm."

DOGS KILL THE SHEEP INDUSTRY

OVER one hundred million people in the United States must be clothed and fed. Many other millions in the allied nations need the help of America. Our soldiers and sailors as well as those of our allies must be kept warm.

We need more wool. We must have more sheep. This appeal comes directly from our government.

(Courtesy National Stockman and Farmer)

Fifty Breeding Ewes Out of a Flock of Fifty-Four Killed in One Night by Two Worthless Curs on a Pennsylvania Farm. The Sheep Were Valued at $1,000

There are several reasons for our shortage of sheep, but the main reason is the dog nuisance.

In 36 states approximately 108,000 sheep are killed every year by dogs. In these states U. S. crop correspondents report the production of sheep would increase 150 per cent were it not that farmers are discouraged by the killing of sheep by dogs.

This means that the dog nuisance causes an annual decrease of 21,000,000 head of sheep that would otherwise be raised.

Out of 5,000 farmers in all parts of the United States, when asked by the International Harvester Company the reason for the scarcity of sheep, all but 18 gave dogs as the main reason.

The dog is a carrier of hog cholera, stomach and tape worms, lice, ticks, fleas, rabies, and foot and mouth disease.

He brings contagious diseases home to the family.

He runs at large, practically unrestrained.

The laws enacted to govern him are not enforced.

He is given more freedom than sheep, hogs, horses and cattle.

He is the only animal that runs at will over other people's fields, yards, sheep folds, and feed lots.

Any one has a right to own a dog, but no one has a right to maintain a nuisance.

The dog owner should be compelled to keep his dog at home or under his control at all times.

The dog owner, not the sheep owner, should be compelled to build a dog-proof fence. The fence that will keep dogs out will keep dogs in.

Dog chains and muzzles are inexpensive. The use of both can be compelled by law. High license, if enforced, will help eradicate the useless dog.

Men have been financially ruined by sheep-killing dogs. Sheep raising in long-settled communities has been discontinued and kept out of new communities because of sheep-killing dogs.

When we let our dogs run at large to destroy the food and clothing needed by ourselves and our neighbors, we are not doing our duty to the community and the nation.

Any Boy or Girl Would Love Pets Like These. They Mean Profit as Well as Pleasure.

A SHEEP CLUB IN EVERY COMMUNITY

A NATION-WIDE movement has been started which promises to do much toward increasing our production of wool and mutton. It is the organization of boys' and girls' sheep clubs.

Not only should there be a bunch of sheep on every farm, but every community should have a sheep club.

No branch of live stock is more profitable or interesting to boys and girls than sheep.

Calf clubs, pig clubs, corn clubs, and potato clubs are doing much to make young people more than self-supporting, but sheep clubs provide an additional opportunity to impress upon our children the value of growing crops and animals. When a boy owns a few sheep he will stay on the farm. He will not want to leave home to seek a job in the city.

Mean Better Communities

The boy or girl who has a pair of ewes will become a part of the community. They will help bind the community to the soil, and the only permanently prosperous people are those who are close to the soil. Sheep clubs mean live stock farming.

Banks, business men, commercial organizations should organize sheep clubs. They should enable each club member to buy a ewe or a pair of ewes. The boys and girls should be given the chance to buy the animals on their personal notes, each note signed by their father or mother, and payable from the proceeds of the increase.

Sheep raising under proper conditions is very profitable. No animal returns more for the feed consumed than sheep. They may be pastured on timber or cutover lands, on waste lands, and along roadsides.

Give Children Orphan Lambs

In 1916 members of sheep clubs in the state of Washington raised over 1,000 orphan lambs. One boy raised 42, mainly on milk and by-products, until they were old enough to graze. Then he herded them on the sweet clover along the irrigation ditches. One girl cared for 58 orphans.

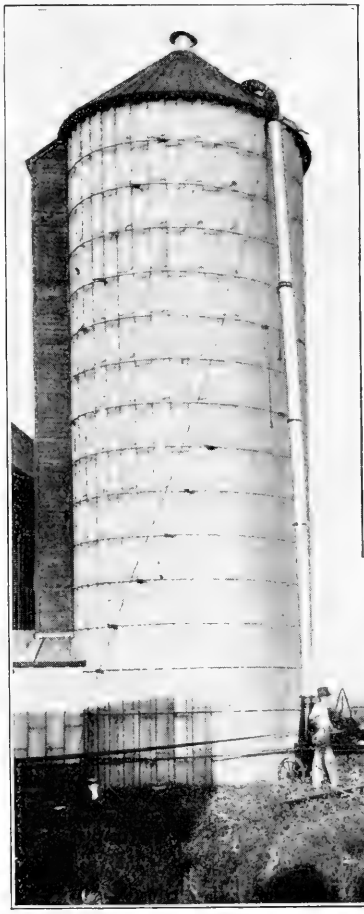
Sheep clubs will do much to awaken a nation-wide sentiment against lawless dogs. In communities where sheep are raised the dogs must go, or live at home and live within the law.

YOU CAN HAVE A SILO

THE silo saves the whole crop; prevents waste in feeding; makes it possible to keep more stock; makes cheap beef and milk; saves storage space; helps utilize cheap roughage; insures succulent feed for winter and summer; tides over time of drouth; clears the land for early fall plowing—silage, the winter pasture.

Missouri found in a steer-feeding experiment where corn silage was compared with hay, $1.07 for every 100 pounds of beef was saved by the use of silage.

The Illinois Station in Bulletin 73 found corn ensilage worth 31 per cent more than corn fodder when all costs were considered.



The Ohio Station found they could produce butter fat 9 cents a pound cheaper by feeding ensilage than they could by feeding hay. A like difference was found in milk production.

The Indiana Experiment Station found corn ensilage to be worth from $5.50 to $6.50 per ton when fed to fattening steers and sheep, and that corn ensilage costs the farmer about $2 a ton.

The Mississippi Station found corn ensilage in the South

the most economic means of producing both milk and butter.

The Pennsylvania Station realized $6.20 a ton for silage when fed for milk and butter production.

The Ontario, Canada, Experiment Station made a saving of $63 on every $200 invested in feed by the use of corn ensilage in preference to hay in feeding cattle.

The Kansas Experiment Station not only produced beef cheaper with silage in the ration, but also the silage-fed steers sold at a higher price on the market than did the dry-fodder steers. They found corn ensilage when put in the silo would keep for five and six years and retain its feeding value.

Thousands of farmers and stockmen all over the country have been demonstrating for the last quarter of a century the economic use of the silo, and all who now have such equipment are strong in its praise.

Results of Ohio Experiment

In a test conducted last year, the Ohio Experiment Station endeavored to answer the question: Can silage be made to take the place of a considerable portion of the grain ration usually fed to dairy cows? The result of this experiment is briefly summarized below:

The rations fed carried practically the same amount of dry matter. In one ration over 50 per cent of this dry matter was derived from silage and less than 18 per cent was derived from grain. In the other ration over 57 per cent of dry matter was derived from grain, no silage being fed.

Ten cows representing five different breeds were fed these rations from two to four months, five cows taking the test the full four months.

The cows fed the silage ration produced 96.7 pounds of milk and 5.08 pounds of butter fat per 100 pounds of dry matter.

The cows fed the grain ration produced 81.3 pounds of milk and 3.9 pounds of butter fat per 100 pounds of dry matter.

The average net profit per cow per month over cost of feed was $5.86 with the silage ration, and $2.40 with the grain ration.

SILAGE BETTER THAN FODDER

AT the Nebraska Experiment Station, in 1911, two groups of calves nine months old were fed from March 25 to August 15. In one lot each animal received an average daily ration of:

	Pounds
Corn	7.5
Alfalfa Hay	4.1
Shredded Stover (without ears)	3.6

Some Farmers Think that Digging Corn Fodder Out of the Snow in Winter Is More Profitable than Having a Silo

The animals in the other lot received an average daily ration of:

	Pounds
Corn	6.1
Alfalfa	3.4
Corn Silage	15.0

The larger amount of corn was fed to the stover lot to offset the grain contained in the silage. The two rations, therefore, were practically identical except that to one lot of animals the cornstalks were fed as shredded stover, while to the other silage was fed.

The silage-fed calves made an average daily gain of 1.8 pounds each, which was about one-third of a pound more than the average daily gain in the stover-fed lot. The total dry matter

required for a pound of gain, which is the best test of the efficiency of the rations, was 8.9 pounds in the lot fed stover, but only 7.8 pounds in the lot fed silage. The silage ration was 12 per cent more efficient than the stover ration. On that basis the same area of corn of the same kind when put in the silo would make 12 per cent more beef than when cut for fodder and fed dry. The difference in this test would no doubt have been greater if the silage and stover had formed a larger portion of the ration in each case.

Cutting Corn for the Silo With a Corn Binder.

HOW TO GET A STAND OF ALFALFA

REMEMBER that alfalfa can be grown on your farm.

It adapts itself to all kinds and conditions of soil and climate.

Alfalfa is the cheapest source of protein.

Alfalfa is the most enriching crop we have, and ensures larger yields from the crops that follow. When a good stand is once secured it lasts for four or five years in the humid regions, and much longer in sections of the West.

Alfalfa can be fed to all kinds of farm animals and has no superior as a hog pasture.

Hogs on Alfalfa Pasture, J. D. Bacon Farm, Grand Forks, N. D.

Alfalfa adds humus to the soil, resists drouth better than any other crop.

As hay, alfalfa has no equal, it is rich in protein, the very thing in which our corn and most other crops are deficient. It balances the ration; will save the purchase of high priced cattle feed. No piece of ground on the farm will bring greater profits than the five, 10 or 20 acres put into alfalfa, provided the work is done properly and a good stand secured.

You Can Grow Alfalfa

Manure—Manure and plow a piece of ground in the fall. If this cannot be done, manure the ground in the winter or early spring, disk thoroughly, then plow.

Kill the Weeds—Disk, harrow or cultivate every 10 days during April, May and June. This will keep weeds from growing, save the moisture and provide a firm seed bed which alfalfa must have.

Lime Important—Apply from three to five tons of crushed lime rock or screenings per acre, during the spring, before sowing.

Time and Amount to Sow—Sow from 10 to 12 pounds of seed per acre either the last of June, during July, or the first of August, without a nurse crop.

Important Things—The important things are—**Manure, Lime, Killing the Weeds, a Firm Seed Bed, Sowing Early to Grow Strong Plants to Withstand Winter, and—DETERMINATION.**

Time to Re-sow—When sown early, say the last of June or in July, should a heavy rain "crust" the ground, preventing the seed from coming up well, there is time to re-sow, thus possibly saving the loss of a year in getting a stand.

Inoculation—Inoculation never hurts, is generally beneficial, and often essential to the growing of alfalfa. This is especially true east of the Missouri river. It is simple and easy to do. Secure surface soil from a good alfalfa or sweet clover field, and distribute three or four hundred pounds of the soil per acre from the rear of a wagon box and harrow in at once, as sunlight will kill the nodule-forming bacteria.

Drainage—Alfalfa will not grow well on sour, wet, soggy ground. Such ground should be tile drained.

How to Keep a Stand

Cultivate, Cultivate, Cultivate—Both Ways—Cultivation is necessary to keep a good stand. Don't be afraid of hurting the alfalfa—**Cultivate both ways.** A spring tooth harrow is the best tool to use. It destroys weeds as well as blue grass, alfalfa's worst enemy in the Corn Belt, at the same time mulching the surface, which prevents the ground from getting hard.

Begin cultivating the first season after sowing—cultivate after each cutting, except after the first in the spring, when you won't have time.

Cut When Shoots Start—Cut when the little shoots or buds at the base or crown of the plant begin to grow. **Don't**

wait, cut then. This is important, especially for the first cutting in the spring.

When the buds or shoots start, the crop is mature, the leaves will soon begin to fall, and the strength is going to the new shoots to produce a new crop. **Get out the mower and cut it, no matter what the weather.**

If we delay cutting until the new shoots grow up there is not sufficient strength left in the roots to send up a new crop immediately. The result is that the alfalfa is greatly injured, if not killed outright. At best, it will turn yellow, make a poor growth, permitting the blue grass, foxtail, crab grass, and other weeds to get ahead of the alfalfa. Keep your eye on the little shoots—never mind the blossom.

Make the last cutting in the fall early enough to permit of cultivation to kill the crab grass, and yet give the plant time to make a good growth for winter protection.

Arrow "A" points to small shoots starting from the crown and stems of a matured alfalfa plant. These shoots will make a new crop. The alfalfa should be cut high enough not to clip off the tops of these shoots, otherwise you cut two crops and get but one.

Let us give to the world the best we have and the best will come back to us.

DO NOT IMPORT SEED CORN

IN 1917 there was nation-wide alarm about seed corn. The condition was the most critical experienced in 20 years. The Corn Belt has suffered tremendous losses. A backward season, early September frost, and a cold October followed by warm, muggy weather in November, did the damage.

As a result, the first impulse was to import seed corn. But corn grown from seed brought in from other localities will be inferior in yield and quality, and in many cases, total failure will follow. You may think the danger is over, but don't fool yourself into thinking that 1917 is the only off year we are to experience. Other bad years will come.

We must not import seed corn until we have exhausted every source to obtain seed in our own neighborhood. Always keep this in mind. Rather than go without seed, import it, but get it from just as near home as possible. Thousands of tests made by experiment stations, tests made in 28 states by the government, and the results borne out in actual experience, show the danger of importing corn.

These facts are not the results of one test, for one year, in one locality, but for a period of eight years in 33 different counties in Iowa with over 6,000 tests. In not a single case did the imported samples equal the home-grown seed. The home-grown corn, in every test, out-yielded the imported corn on an average of 20 bushels to the acre, and was of better quality.

Will we ever learn to save seed? We can import potatoes, oats and wheat, but we cannot import seed corn and expect to get as good results as we would get from corn grown in the immediate neighborhood. It will be impossible to measure the loss of land, labor, food and money to the people of this country if we fail to realize the importance of these facts.

> "Mother Earth may offer her choicest fields, the sun may lavish his brightest rays, the gentle showers may float down on the balmiest winds of spring to nourish the infant plant—yet, if this child of God has been touched by the blighting breath of decay, or is the offspring of perverted parentage, all the kindly care of loving Nature, aided by the hand of man, but emphasizes the more strongly that 'Whatsoever a man soweth, that shall he also reap.' "

HARVEST SEED CORN BEFORE IT FREEZES

IF every ear of corn intended for planting was harvested at the proper time and properly stored, millions of dollars would be added to the value of our annual corn crop.

Every ear of corn intended for planting should be harvested before the severe fall freezes, and stored where it will dry out and keep dry. In Iowa and the northern half of Illinois, this work should be done during the last 10 days of September or the first four or five days of October. Frozen seed corn costs the country millions of dollars every year.

Fig. 1.—Method of Gathering Seed Corn.

Many farmers are careful to harvest and store their seed corn at the proper time and in the proper manner, but the majority of us depend for seed upon the occasional good ears found during the husking season or we select our seed from the crib in the spring.

This results in poor seed corn, and poor seed corn means a poor stand, missing hills, weak stalks, producing little or nothing. It means less than 30 bushels per acre instead of 60. It means that we produce an average of one small ear to each hill instead of two or three. It means wasted land and wasted labor —and in these days of food shortage we cannot afford to waste either.

If harvesting seed corn was a portion of our everyday work, like feeding our live stock, it would be done on time. But as it comes only once a year it is human for us to put it off or neglect it altogether.

Fig. 2—Tying up Seed Corn.

Fig. 3—Stringing the Ears.

On every farm where corn is grown, a certain date, depending upon the locality, should be set aside as seed corn day, and on that day the seed corn for the next year's planting should be harvested and stored.

In many cases the work could not be completed in one day, but a good beginning could be made, and it will require less time than is generally supposed. Six bushels of seed will plant about 43 acres of corn, if there is no waste and no replanting is necessary. But it is best to save 15 or 20 bushels for each 40 acres. This will provide for all ordinary emergencies and will enable us to plant only the best and strongest ears.

One of the best methods of gathering seed corn is to go into the best fields with bags or baskets and select well matured ears from the most vigorous stalks.

We should not fail to consider the stalk in selecting the seed, for it requires large, thrifty stalks to produce good, big ears. It is not a good plan to take the ear from a stalk that grew in a hill by itself, or from one in a hill with a barren or weak stalk. Many of the kernels on such an ear are likely to be pollenized by the barren or weak stalk.

Choose ears of a medium height. If we select the highest ears, our corn will likely become late. If we select the lowest ears we will soon have corn that is too early and with shallow kernels and wide furrows between the rows.

Fig. 4—Ready to Hang Up.

Pick ears that drop over so that their tips are turned downward. Such ears shed water better when it rains and are usually drier than ears standing upright. Shank should be short, as ears with long shanks are harder to husk and are more often damaged.

See that the husks are long enough to cover the tips of the ear, but do not extend far beyond. If the tip is left bare, it is likely to be damaged by insects or disease, and if the husks extend far beyond the point of the ear, they are usually tightly closed so that the ear cannot dry out well and is difficult to husk.

There should be a medium growth of broad, thrifty leaves distributed evenly over the stalk, and the plant should be free from all forms of disease, such as smut, rust, etc., and should also be free from suckers.

Storing Seed Corn

As soon as the corn is picked, it should be husked and placed so that the air can circulate freely around every ear. Never put it in a pile on the floor, even over night.

When picked, corn contains a lot of moisture and if placed in a pile will heat, or mould, or both in a very short time. It should be so arranged that the ears do not touch each other.

A rack can be made or purchased which will provide for the proper conditions for storing seed corn and one of the most satisfactory methods is to tie up with binding twine as shown in cuts.

The strings, containing 12 or 15 ears each, can be suspended from horizontal wires or from nails driven in rafters. By this method enough corn to plant eight acres can be stored in a space 3 feet long and 10 inches wide.

This method of storing gives better protection from mice than when the corn is spread on the floor, or corded in piles, gives better circulation of air, which allows the corn to dry out quickly and thoroughly, thus protecting it from moulding and sprouting.

Experiments have shown that the attic or some up-stairs room, where the windows can be opened to give circulation of air during October and November, is the best place to hang seed corn. A space 3 by 8 feet will hold 200 strings of seed—enough to plant 200 acres. If three-fourths of this is discarded in the spring there will still be enough to plant 50 acres, which is more than the average corn acreage on each farm. Hang the strings in rows, four inches apart, each way.

TEST EVERY EAR OF SEED CORN BEFORE PLANTING

IT is only good business to know that the seed that we put into the ground will grow; and the only way we can tell good seed is by testing it. We can't do it merely by looking at it. If we want profitable yields, we must plant good seed.

It will take about 600 ears to plant 40 acres. Twenty-four hours' time of one man, two days' work, will test six kernels from each ear to plant 40 acres—yet, because it is **"too much bother"** we pick out 600 ears, look at them, guess that they will grow, and plant them. As a consequence, more than 12 acres out of each 40 acres of corn planted on the average Corn Belt farm produce nothing. This is worse than useless, because we must plow, plant and cultivate these 12 acres and get nothing in return.

By testing we get rid of the bad, weak, and moldy ears. Testing does not hurt the corn; it costs but little work and can be done at a time of the year when other farm work is not pressing. By testing we have everything to gain and nothing to lose.

In 1910 and 1911, at the Iowa State College of Agriculture, a careful germination test was made of 45,000 ears of corn. The results show that the testing of each ear before planting, increased the yield per acre, 19½ bushels in 1910, and 10 bushels in 1911. It will cost from 10 cents to 15 cents per acre to test the seed by the sawdust-box method.

How to Test Seed Corn with the Sawdust Germination Box

The germination box is about 30 inches square and 4 inches deep. Fill the box about half full of moist sawdust well pressed down so as to leave a smooth, even surface (see Fig. I)—The sawdust should be put in a gunny sack and set in a tub of warm water for at least an hour (or still better over night), so that it will be thoroughly moistened before using. Rule off a piece of good white cloth (sheeting), about the size of the box, into squares, checkerboard

Figure I.

fashion, 2½ inches each way. Number the squares 1, 2, 3, etc. Place the cloth on the sawdust and tack it to the box at the corners and edges. (See Fig. II.)

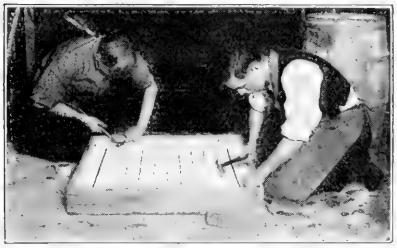


Figure II.

Lay out the ears to be tested side by side on planks, tables, or on the floor, and drive nails at the ends of the rows to hold the ears in place; remove one kernel from near the butt, middle, and tip of the ear; turn the ear over and remove three kernels from the opposite side in like manner, making six kernels in all, thus securing a sample from the entire ear. Place the six kernels at the end of the ear from which they were taken. Use care that the kernels do not get mixed with those from another ear. After the kernels are removed, boards may be laid over the rows of ears to keep them in place until the result of the germination test is known. Place the six kernels from ear No. 1 in square No. 1 of the germination box; from ear No. 2 in square No. 2, and so on with all the ears. Lay a piece of good cloth (a good quality of sheeting) on top of the kernels and dampen it by sprinkling water over it. (See Fig. III.) Press down gently with the palm of the hand, being careful not to misplace the kernels in the squares. Now place over this cloth another cloth of the same material considerably larger than the first one (about six feet square, see Fig. IV) and fill in on top two or three inches of moist, warm sawdust.

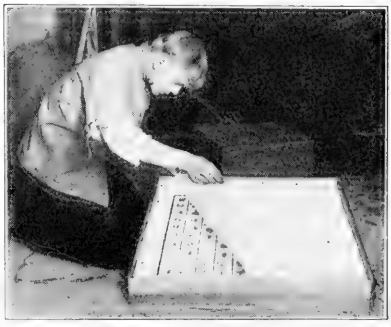


Figure III.

Some use sand or soil in the germination box, but after many tests, with other materials, sawdust is, beyond question, far better than anything else.

Pack it down firmly by treading with the feet or with a brick. (See Fig. V.) The edges of the cover should be folded over

Figure IV.

Figure V.

the sawdust in the box to prevent drying out. (See Fig. VI.) Now set the box away for eight or nine days until the kernels sprout.

Figure VI.

Keep in an ordinarily warm place, like the living room, where it will not freeze. The kernels will germinate in about eight days.

Remove the cover carefully to avoid misplacing the kernels in the squares. Examine the kernels in each square in the germination box, and discard all ears whose kernels in the box are dead, moldy, or show weak germination.

Special Things to be Observed—Be sure to soak the sawdust at least one hour—or better still over night.

Use good quality of cloth (sheeting) for the cloth which is marked off in squares and the cloth which is laid over the kernels.

Leave at least two inches of margin around the edges of the box, to prevent freezing and drying out.

Rule the cloth off in squares $2\frac{1}{2} \times 2\frac{1}{2}$ inches.

Never use the box the second time without first thoroughly scalding both the cloths and sawdust. (The cloth should be untacked and the sawdust removed to do this.)

Do not open too soon. The stem sprouts should be at least two inches long.

Throw out all ears showing weak germination as well as the dead ears.

How to Read the Test

Figure VII.—Ears Nos. 2, 6, 9, and 11 should be discarded. Ears Nos. 3, 5, 8 and 10 are strong. Save out ears like these for the best 100 ears, provided they are good in other respects. Ears may have life as in the case of No. 6, but when these kernels fall into the hills with the others, like Nos. 3 or 5, they are deprived of food and light and give us stalks with little or no grain, but they produce pollen to scatter over the field to propagate their kind. Ear No. 6 is one of the kind that fools us, when we attempt to judge by the eye and the jack-knife method. Ear No. 6 was planted by the side of ear No. 3 but yielded less than half the corn in the fall.

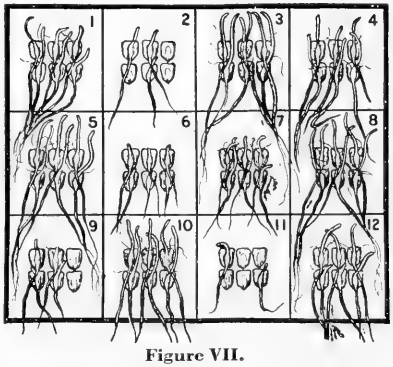


Figure VII.

If you buy the germination boxes and the cloth and hire the work done, it will not cost to exceed 16 cents per acre to test every ear for seed.

We cannot afford to neglect this important work. If every farmer would test every ear of his seed corn in the winter in the way described above, the yield would be wonderfully increased. No other time will be so profitable to the farmer as that spent in testing the vitality of his seed and in grading to insure the planter's dropping the proper number of kernels in each hill. It is possible for everyone to do this work. It will cost nothing but the time, of which there is plenty at the season when the work should be done. Every farmer should realize the importance of testing every ear of his seed corn before spring work begins.

One day spent in March on the seed corn may be worth more than a month of hard work in the field later.

Without good seed, the after labor is of little avail. Nothing is more depressing or discouraging than a poor stand of corn. If the seed is carefully tested and only good seed planted there are no risks to run, except those made necessary to everyone from the conditions of the weather, insects, etc., which cannot be controlled. It is during the bad seasons, when conditions are unfavorable, that we most need the kernels with large, deep germs of bright, cheerful color, well matured, and likely to give the most vigorous germination.

EIGHT CORN COMMANDMENTS

1. **Thou shalt harvest every ear of corn intended for seed next year, and store it where it will dry out before there is danger of injury by freezing.** The exact date at which this should be done will vary according to the latitude in which you are situated.

2. **Thou shalt test at least six kernels from every ear of seed corn and discard the dead, weak and moldy ears.**

3. **Thou shalt shell each ear of seed corn separately, and grade it so that the planter will drop the desired number of kernels regularly.**

4. **Thou shalt improve the corn by planting some of the choicest ears together from which to select seed for the following year.**

5. **Thou shalt not import seed corn from a distance except in small amounts as an experiment.** Do not plant the general fields with imported corn until it has demonstrated its value in your locality.

6. **Thou shalt not plant corn in a field the next year after it has been in small grain.**

7. **Thou shalt not grow corn more than two years in succession upon the same land.**

8. **Thou shalt have a rotation of crops which includes clover, cowpeas, or some other leguminous crop at least once every four years.**

All of these things can be carried out upon any farm without expensive equipment and without increasing the expense already incurred in the management of the farm.

SAVE THE CROP BY GOOD SHOCKING AND STACKING

THE loss to the United States every year from poor shocking is enormous. This is especially true in rainy seasons.

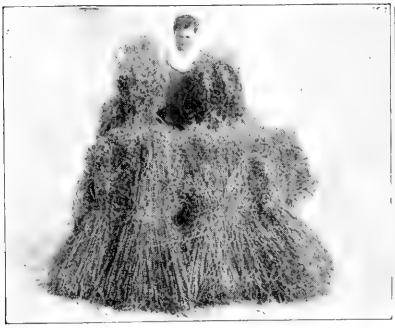
Many do little more than throw the bundles together and call it a shock. Often this is done with the false notion that we are saving time, but frequently it is due to not knowing how to "set up a shock."

A GOOD WAY TO SHOCK OATS

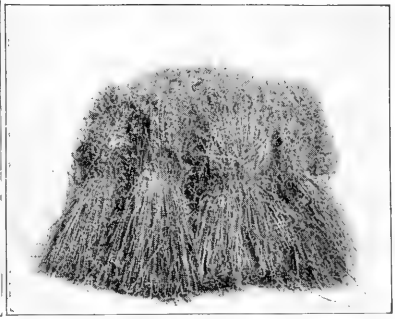
FIRST STEP—Brace the first two bundles firmly against each other, bringing them down with force so that the butts fit solidly on the ground; call these bundles one and two.

SECOND STEP—Brace the third and fourth bundles firmly over the butt of bundle one. Likewise place bundles five and six over the butt of bundle two.

When a shock once twists down, t is impossible to reset it. The fact is, we let it go, hoping that we will soon thresh or stack.



THIRD STEP—Bundles seven and eight have been placed in the open space on the front of the shock and bundles nine and ten are brought up ready to place in a similar position on the other side of the shock.



FOURTH STEP—Bundles nine and ten have been placed and the shock is ready to cap.

The important thing is to set the shock up right in the first place. The right way is the easiest and quickest in the long run. Oats will stand a lot of rain if the bundles stand up, but when they go down the oats are almost certain to spoil. If the weather is bad, bundles lying on the ground will not dry out, especially if they are thrown together in a bunch or have twisted down in the shock.

There are several good ways of making a shock. It is important, first, to **have a definite plan,** and not just stick the bundles in "any old place" where there seems to be room; and, second, to **bring the bundles down with force,** lots of it, so that the butts fit solidly on the ground. Don't just lean the bundles up against the shock; if we do, the shock will certainly twist down.

KNOCKER OR BOOSTER?

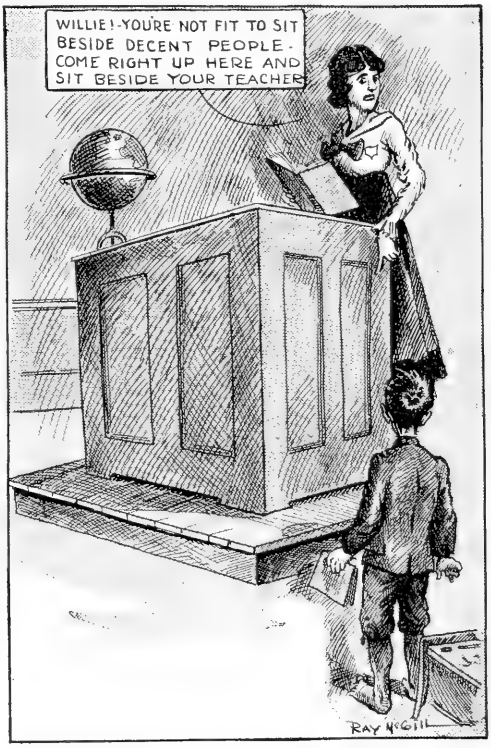
WHEN the Creator had made all the good things, it seemed there was still some dirty work to do, so He made the beasts, and the reptiles and the poisonous insects; and when He had finished He still had some old scraps left over that were too bad to put into the Rattlesnake, the Hyena, the Scorpion, and the Skunk; so He put all these together, covered it with suspicion, wrapped it with jealousy, marked it with a yellow streak, and called it a **Knocker.**

This product was so fearful to contemplate that He had to make something to counteract it, so He took a sunbeam, put into it the heart of a child, the brain of a man, wrapped it in civic pride, covered it with brotherly love, made it a believer in equality and justice, a worker for and supporter of every good thing in the community, and called it a **Booster;** and thenceforth mortal man has had the privilege of choosing his associates.—Anon.

HOW TO VITALIZE THE TEACHING OF AGRICULTURE IN THE RURAL SCHOOLS

THERE is no longer any question as to whether or not agriculture shall be taught in the rural schools. Sentiment demands it; in many states the law requires it.

The word "agriculture" as used in this article refers not only to the subjects directly pertaining to farming, but also to anything pertaining to the life and welfare of the children and the people of the community—health, sanitation, home conveniences, social conditions, and community interests. In fact, it includes anything which enables us to teach **in terms of the lives of the people and the needs of the community.**



You Think this Is a Joke? No! This Is no Joke—This Is a Tragedy

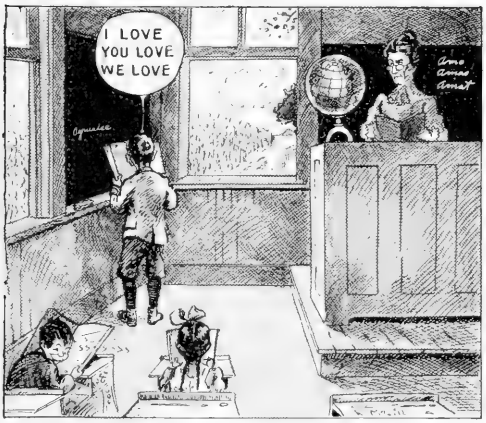
School work along these lines is new. We are just now establishing methods and precedents. What we do within the next 10 years will largely determine the future of the work. Let us start right, for methods are hard to change after they are once established.

In a few years some of the things we are now doing in school will seem strange to us.

Why should children at their period of greatest activity be compelled to sit quietly in their seats six hours a day?

At this age they are veritable dynamos of nerves, muscles, and energy. Can they whisper? No! Look out the window?

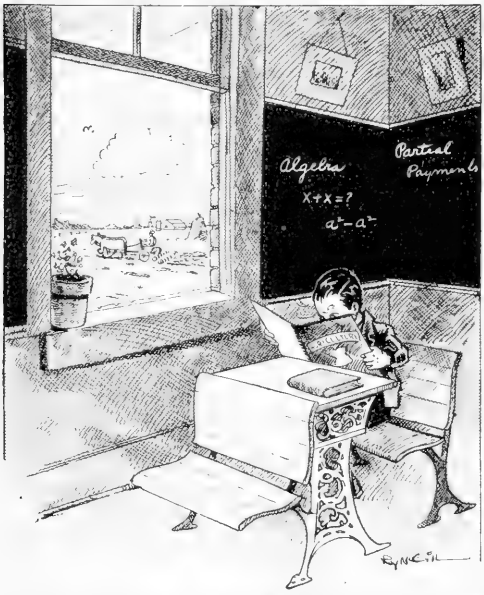
No! Use their hands and feet? No! They must sit still and keep "mum" except when called upon to recite.



Developing an Interest in Grammar

How unnatural! Older people can't and won't stand it. A lecture an hour long taxes the endurance of most of us. If we, who are older, and have reached a period in our lives when we are naturally quiet, find it difficult to sit still one hour, how can we expect children to sit still for six long hours each day?

No wonder we get in school incidents such as cartooned on these pages. **Are these jokes? No! They are tragedies.** And tragedies for which the teacher is not to blame. She simply fell heir to a system. She is living up to her ideal of "keeping order." She is doing what is expected of her. In fact, she would lose her job if she didn't do it.



Nothing but Words, Words, Words, from the Pages of a Book, While the Whole World Without Unfolds a Lesson Written in the Language of Reality

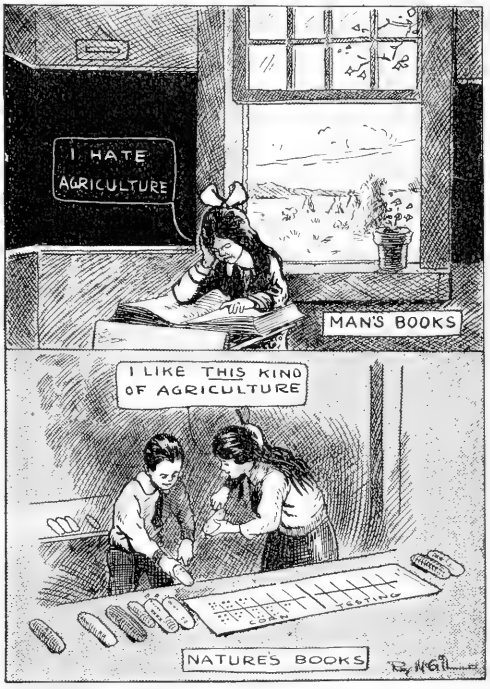
The system must be changed. In fact, we are now rapidly changing it. Already, especially in our manual training and domestic science classes, considerable advancement has been made. Agricultural work, if properly taught, will help greatly to bring about better methods.

Bookish work and skimming are fundamental errors in our agricultural work.

We assign pages in a book—teach words, words, words, not things.

An eighth grade girl in a school where agriculture had been taught from a book for two years said: "We had examination in agriculture yesterday, and I'm afraid I won't pass. I hate agriculture."

This girl was assisting one of our extension workers in corn testing—the first real agriculture (i. e., study of things) ever put into her school. Remembering that corn testing was agriculture, she quickly added, "Oh, I don't mean this. I like this kind of agriculture."



There's a Wrong and a Right Way to Teach Agriculture

Here is the contrast. One sort of agriculture is bookish, dead, has no appeal to the children, and no effect on the community; the other is full of life, of interest, of influence.

We mean to cast no reflection on books. They are helpful; they are necessary; but they are not the end in themselves.

They must be used as tools, just as an axe is used as a tool —a means to an end.

Rotate the Subjects

The teaching of agriculture will not be a real success so long as we teach exactly the same things over and over and over again year after year. Neither will it be a success if, in our attempt to popularize the subject, we skim all the interesting things the first year or two, leaving nothing crisp and fresh and new for the teachers who follow.

Let us rotate the subjects, thus having something new and live each year.

Rotation of subjects gives the pupils more agriculture, keeps the work live and real and vital, and makes it easier for the county superintendent, who usually has little or no help in rural supervision. He can train his teachers for one line of work, while it is very difficult to train them for all lines of work.

Four-Year Rotation Plan

The **Four-Year Rotation Plan** corrects these errors. Have one year devoted to **Crops,** the second to **Making Things,** the third to **Animals,** and the fourth to **Soils.**

When this four-year rotation is finished, we can start in again with the first year's work. By this time the older pupils have graduated, and it has been so long since the first-year subjects were studied that they will be new and fresh to both teachers and pupils.

Select Subjects That Belong to the Region—In selecting the subjects, use material that belongs to the region. During the Crop year, the teachers in the Corn Belt should study Corn, Alfalfa, Oats, Clover, Timothy, etc.

In the South the teachers should study Cotton, Bermuda Grass, Lespedeza, Winter Oats, Sugar Cane, Peanuts, etc.

In a fruit and truck gardening section, small fruits, strawberries, and vegetables should be studied. In selecting the subjects, remember that the important principle is to teach in the terms of the lives of the children.

Fit the Work to the Needs of the Community—If alfalfa is selected as a subject for the Crop year, we should not try to teach everything there is to know about alfalfa. Let us ask ourselves this question: "What one, two, or three things can I do to encourage the growing of alfalfa, and to increase the profits from it in this community?"

Answering this question will help us to distinguish between things which are merely interesting and things which are vital. To know that alfalfa was grown in Rome is interesting; to know how to get a stand of alfalfa is vital. It does no harm for teacher and pupils to know things which are merely interesting, but in our teaching we must put the emphasis on the vital things.

In studying each subject take up a few concrete points, and aim to get definite, measurable results.

SUBJECTS FOR A FOUR-YEAR ROTATION

FIRST YEAR—GROWING THINGS

Corn—Harvesting Seed Corn—Storing—Testing—Cultivation—Corn Root Worm—Corn Root Louse.

Alfalfa—Importance of Alfalfa—How to Get a Stand—When to Cut.

Oats—Treatment for Smut—How to Build a Shock.

Seeds—How Seeds Grow—Depth to Plant—Knowing Seeds.

Weeds—Worst Weeds—How to Kill Weeds.

Garden—How to Make a Garden—What to Plant—How to Cultivate.

*__Sewing__—Making a Sewing Box—Threading a Needle—Making a Knot—Hemming a Towel—Making an Apron, etc.

Removing Stains—How to Remove Ink, Iodine, Grease, Tar, etc.

SECOND YEAR—MAKING THINGS

Rope—Tying Knots—Splicing Rope—Making a Halter.

Cement—How to Mix Cement—Making a Cement Step, Tank, Post.

Farm Tools and Machines—Importance of Good Tools and Machines—Setting Up a Corn Planter—How to Use Tools—Care of Tools and Machines.

Fly Traps and Screens—How to Make, Use, etc.

Putting Out a Fire—Use of Fire Extinguisher.

Home Conveniences—Casters under Wood Box—Arrangement of Kitchen.

Cold Pack Canning—Making a Homemade Outfit—Making Jar Holders—Canning Tomatoes.

THIRD YEAR—LIVE THINGS

Why Keep Live Stock—How to Feed—Testing Milk—Killing Pests—Diseases and Remedies—Protecting Birds—Preparing and Cooking Food—Setting Table.

FOURTH YEAR—SOIL AND HOME

How to Save Moisture—Why Rotate Crops—Making Soil Fertile—Drainage and Irrigation—Testing Soil—How to Keep Well—Getting Trees, Shrubs, and Pictures for School and Home—Getting Folks Together.

*__Note__—The boys' and girls' work should not be sharply divided. Remember that boys and girls up to 12 or 13 years of age are interested in the same things.

PATRIOTISM OF THE PRESS

WITH the entry of the United States into the world war, America faced problems of the most vital importance. They were problems which called for the best thought, the most untiring efforts, the greatest sacrifices, the most intense loyalty. They were problems which could be solved only through the unselfish patriotism of the people.

A great army had to be created; a powerful navy had to be built. Munitions, clothing, food and hospital supplies had to be provided in enormous quantities. Provision for the care and comfort of our soldiers and sailors in camp or at the front had to be made. Transportation for our military and marine forces had to be assured.

After three years of warfare our allies in the great struggle were in immediate need of food and financial aid. It was the part of wisdom for us to help feed and help clothe and help arm the allied forces already on the battle field, that they might be more efficient in the struggle and thus reduce the number of our own boys we should need to send to the front.

The task that confronted us was the most enormous in all our history. It was one that called for billions of dollars, for an unusual production and the most careful conservation of food; for the breaking of home ties in thousands of homes; for the consecration of our united efforts and our resources to a common cause.

It was an emergency that demanded an immediate awakening of the people. There was no question but that the people would respond if they understood the vital needs of the nation, but they must be informed and that quickly.

In this crisis a mighty wave swept the country from coast to coast. It was a wave of patriotism—the patriotism of the press.

Two thousand, five hundred daily newspapers carried to their readers, the President's appeal to the people. Seventeen thousand weekly, tri-weekly and semi-weekly papers fell in line. Five thousand monthly, semi-monthly, bi-monthly and quarterly publications joined in this splendid example of patriotism.

These 24,000 periodicals, published in 36 different languages in over 11,000 different cities and towns and having a combined circulation of fully 50,000,000, carried the message to practically

every home and every person in the United States, Alaska, Porto Rico, Hawaii and the Philippines.

Not once, only, but repeatedly, constantly, impressively they explained to the people the needs of the nation and with all the power and influence they could command, urged the people to respond.

"Grow a garden; increase the food supply" was their first appeal. "Enlist in the army or the navy" was the next. Then followed appeals to the people to buy Liberty Bonds, to subscribe to the Red Cross, the Y. M. C. A., the Y. W. C. A. and the Knights of Columbus funds.

Then came appeals for war work enlistments, appeals for boys to help work on the farms, appeals to housewives to sign food conservation pledges, appeal to women to join Red Cross units, and finally appeals to all to buy war savings stamps, and subscribe to the third Liberty Loan.

In practically every issue of all these publications one or more of these appeals have appeared. In the aggregate they have occupied, not merely columns but miles of reading matter and editorials, worth billions of dollars if regular advertising rates had been charged.

As a result millions of war gardens were planted, thousands of volunteers for the army, the navy, the Red Cross and other camp and field activities were secured. Two billion dollars of the first Liberty Loan issue and $4,500,000,000 of the second issue were purchased. Thirty-one million dollars was subscribed for the Y. M. C. A., millions more for the Red Cross, the Y. W. C. A. and the Knights of Columbus. Ten million food conservation pledge cards were signed and hundreds of thousands of men, women and children enlisted for war work of various nature.

In no other way, but through the loyal work and the unselfish service of the press could all these things have been accomplished.

When the war is over and we take time to look back over these days of struggle and sacrifice, we will be proud of the patriotism of the people, of organizations, of business firms and corporations. But in the final analysis the brightest picture, perhaps, will be the wonderful loyalty, the sublime patriotism of the press.

FARM MACHINES AND THE WAR

Man Power Must Be Replaced By Machine Power to Maintain Average Crop Production

THE peace and well being of the people not only of this country but Europe rest in a great measure upon the implement dealers of America. Never has their responsibility been so heavy; upon no one must the government depend so greatly.

Our army and navy, the workers in our industries, the women in our homes, the children in our schools, the people of the countries allied with us in the desperate struggle, all must be fed. Food is the vital need of the world. Without a greater production and a greater conservation of food than we have ever known, we cannot win the war.

The Government has appealed to the farmers to increase their acreage of practically all grains from 5 to 51 per cent over what it was in 1917. This appeal is based upon the food requirements for the coming year.

To cultivate this increased acreage will necessitate an equal increase in the man power on the farms. But our boys have gone to war. We are short of labor. The situation presents an emergency to which there is but one solution—**labor-saving machines and preparedness.**

The Dealer Must Do His Part

Upon the farmers of this country rests the responsibility of food production, but the implement dealer must provide the farmer with the means for growing more food with less labor.

This can be accomplished only by furnishing machines and repairs and having them shipped on time.

Co-operation of All Interests Necessary

To provide the machines and parts of machines needed to make up the shortage of labor will tax the ability of every company manufacturing farm implements.

Because of war demands, there is a shortage of labor in the factories, a shortage of iron, steel, and other material, and shipments will be slow and uncertain.

To be prepared, the dealer must know what machines the farmers in his community will need, what repairs they will require; know these things at the earliest possible moment; order early

so that he will receive the machines, set them up, and see that they are on the farms and in perfect running order before they are needed. He must see that all old machines are repaired and in good shape before they are to be put to use; get farmers to realize the importance of having extra parts on hand, especially the smaller repairs such as bearings, knife sections, gears, etc.; take pains to see that every farmer who buys a machine is instructed how to use it so as to get the most out of it; show the farmer how to give his machine proper lubrication and proper care; anticipate every trouble that is likely to be experienced.

Let No Machines Stand Idle

The dealer should demonstrate to the farmers the economy and efficiency in using the largest units possible to supply the horse power or man power needed; see that smaller machines are not discarded but are sold or made available to other farmers who can use them efficiently. Let no machine stand idle for lack of repairs or for any other reason.

The dealer should keep his stock of repairs right up to the limit so as to avoid any delay, and when a farmer needs repairs he should see that he gets them as quickly as possible.

Freight cars will have to be loaded nearer their capacity than ever before; they will have to be unloaded more quickly.

When repairs and machines are ordered, binder twine and other supplies that are always needed should be ordered as "fillers" if they are required to fill the car to its capacity.

In other things than just his business, the dealer must be a live wire in his community. There will come a rush season on the farm. There will come a cry for labor. It will be the duty of the dealer to work with his Chamber of Commerce in a movement to close the stores and other places of business, if need be, that every man and boy may help a part of the time in the harvest field.

He should co-operate to the utmost in the conservation of food. He should grow a garden himself and be a leader in a home and vacant lot garden movement. He should be active in encouraging home canning so that the surplus of the gardens may be preserved for winter.

The implement dealer must go forward, appreciating the seriousness of the situation; realizing the responsibility that rests upon him.

EVERY FARM A FACTORY

THE opportunity of the town lies in the country. The country can get along without the town, but no town ever has or ever will be permanently prosperous where the land is poor. The town is built on farm profits; on what farmers produce in excess of their home needs. In fact, towns are consumers, not real producers. Towns are the natural evolution and outgrowth of necessity—places to store and distribute the world's surplus products through the channels of commerce. There is but one road to permanent city building—that road leads to the farm. Business is so sympathetic, so sensitive to crop production, that the forecast of a poor wheat or corn crop affects the markets of the world. When the harvest fields smile, towns wax fat, and factories increase the pay roll. Corn, wheat, and hay, beef, pork, and poultry—these are the soil builders, the home builders, the builders of great cities.

The old-fashioned Chamber of Commerce, with its cash bonuses and free factory sites, is rapidly passing away. Instead of grabbing business from each other, we must realize that our opportunities lie hidden in the fertility of the soil. Towns and cities are beginning to look to the country, out to the fields of growing corn, wheat, and cotton for their real prosperity. A successful hay campaign will bring factories to the town. Hay means beef and pork, which beckon the packing house and storage plant. More corn means cereal mills, glucose factories, starch factories. Flour mills locate in wheat producing sections. Creameries follow the dairy cow, and the truck patch calls for the canning factory.

Let us have more Chambers of Commerce and agriculture. Let us create wealth from the opportunities at home, and not subtract it from other communities.

We must not forget that every farm is a factory, and that in every state there are thousands of these factories which need our best thought and effort to make them productive.

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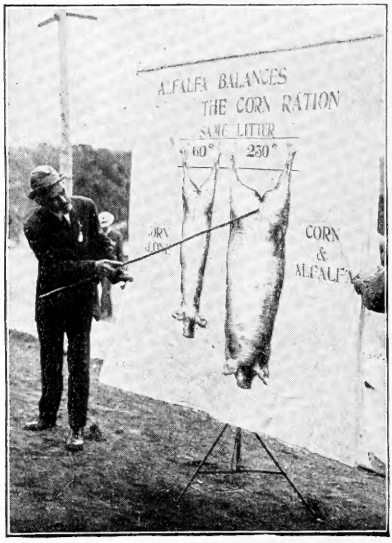

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