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DETROIT, JUNE 3, 1922

CURRENT COMMENT

THE MICHIGAN FARMER SAYS:

One of the great nations of the earth is determination; it wins most battles.

On some farms apparently the chief thing to do is to put the tile into fertile.

Culture is a great thing for people and crops. The more you use the better crops and people you grow.

There is no excess in success, for success is made up of just enough of the right kind of things.

Swatting time is here for flies and roosters. Roosters have served their usefulness; flies never had any.

The horse that does the steady pulling does more worth-while work than the one which runs a mile in two minutes flat. The same with folks.

The Super-Optimists

OPTIMISM is one of the great forces in life, one of the great joys of life, for it helps us through the dreary and discouraging times. It is the great power behind advancement, for optimism builds, while pessimism tears down.

For our own selfish sake, for the sake of our family, and community, we should all be optimists, just plain, regular optimists. Now, there are different kinds of optimists. We have the common grass kind who have a faith that the future will take care of itself in good shape and know that the present is not as bad as it might be. And then there are the regular optimists who base their optimism on facts and good judgment. And still there are the super-optimists who float through clouds of fancy and spread exaggerated good to the multitudes below.

Such a one must have been he who is spreading the report that the farmers are again riding on the wave of prosperity. This would be true but—

The sixteen per cent increase in the price of wheat, the forty per cent raise in hog prices and the increase in most all farm products have not brought excessive amounts of money into the rural bunkers. It all helps, but the great share of the big return of prosperity is going to the monied holders, the in-betweeners in the scheme of marketing farm products. The farmer has just about finished his selling activities and is now busy with another year.

The great and hopeful sign is that

each year farmers are cooperatively holding more of their products and taking advantage of the seasonal advance in prices.

In these price changes alone there are fortunes, fortunes which should have belonged to the rural population. But with the great changes in farm marketing that are going on, more and more of these profits will belong to them.

Farming is a great life now, but the prospects for the future are still greater.

A Good Sign

DURING the past few years we have had exasperating things happen to all of us, and the farmer has had his share. He has gone through the deepest Valleys of Depression and through many a Slough of Despond. But the many trials have shown that he is a good fighter.

One of the best signs that he is there with a come-back (please pardon the slang), is the way that the Michigan Milk Producers' Association has been put across.

This cooperative effort was launched at one of the worst possible times to insure the success of such a venture. But still, in a few short months this organization has become an assured thing because of the financial and moral backing the farmers of this state have given it.

The success of this endeavor is an added indication that the farmers realize that they themselves are the ones who can most effectively solve the fundamental problems which confront them and that the "charity" assistance from the outside will never produce the desired results.

The French Vine and Wine

THE status of the French vineyards is apparently an indication of the trend of the times toward temperance. In 1874 France had over six million acres in grapes and although French wines have held an undisputed position in the world for their excellence this acreage has decreased until it was considerably less the four million just before the war.

Wine making was France's chief export industry before the war, but now it is very seriously affected by the lack of markets. It is the observation of the Department of Commerce in Washington that, due to the continued far-reaching curtailment in the export trade, the French wine industry will likely decline and relatively more attention will be given to the growing of other fruits.

Is this not an indication that some can truly have reason to bewail over the supposed fact that folks are dying of parched throats and the world is shriveling up with dryness?

The Average and Success

WHEN we take upon ourselves the excitement of reading statistics we soon come to the realization that what is called the average is pretty low. When we consider the average yield of corn, wheat and other crops, the average production of the dairy cow and the average losses from pests and diseases as well as the average income from the farm it makes one wonder how some folks get along.

Take, for instance, the average yield of corn, 26.6 bushels per acre, this would produce an actual loss on the crop, even in a high-priced year. Then compare this average with the eighty and the hundred-bushel yields that are produced by those who make a business of growing corn.

If it takes a little more than the av-

erage yield to cover the average cost of production, one can readily see that it is the average plus the fifty, sixty or seventy bushels which spells success. It's the plus that brings the profit.

It may cost a little more to grow the big crops, but besides growing larger crops, these plus men grow better crops, and therefore, because of the quality, they often get a better price per bushel. The few added cents in cost and care means added dollars in profits.

Isn't it possible that the most of us are like the old hen who was trying to spread herself? Wouldn't it be better if we covered less ground but covered it better? And wouldn't we be more likely to hatch out better crops in doing so?

Boys and Pigs

them, although one is sometimes led to think that there is a resemblance between the appetites of the youngsters of both the human and porker kind.

No, our purpose is to call to your attention the fact that since the boys' interest in pigs has evolved from pulling its tail to hear it squeak, to the raising of prize-winning porkers, we have had better pigs and also better boys. Somehow the influence of one upon another has been entirely beneficial.

There is no doubt but what the boys' club work has been responsible for this. It has done more than anything else to instill in the boy a real love for the farm and an awakening to its possibilities. It has also developed in the boys the spirit of sportsmanship in competition, and furthermore it has developed leadership and initiative in the rural youth that would not have been developed in any other way. And still there is another thing that it has done. Through coöperation the boy and the pig, or the calf, have shown dad that there were some things about farming that he did not know.

Let's just hope that the supply of boys and pigs keeps up so that this good work can go on with increased power.

Spray Poisons on Fruits

WE have before us an announcement of a bulletin issued by the department of agriculture on poisonous metals on sprayed fruits, which states that "sprayed products are not harmful when proper methods are used."

This recalls what we heard several years ago, that a sprayed apple has on it so little poison that it would require the eating of about four hundred apples to consume enough poison to do any serious damage. So it seems that even though the apple is such a good fruit that "an apple a day will keep the doctor away," in a test of this kind the apples would necessitate the calling of an undertaker before the poison would.

So it appears that one need not fear any serious consequences if he steal an apple from his neighbor's sprayed orchard, from the apple at least. But, of course, what he may get from his neighbor is another thing.

Our Distant Markets

IN the recent consideration of the ship subsidy bill, prominent farmer representatives have spoken before congress in favor of it. It may seem a little far-fetched for farmers to be interested in this bill, but from a broader viewpoint and under present condi-

tions there are good reasons that they should be.

The war has changed things considerably. Before the war we were a debtor nation and our creditors took our products in payment for our debts, and used their own boats to carry them in. That, to a great extent, made our markets. But now that we are a creditor nation we have to seek our markets, and if we want the service we need in transportation, we shall have to use our own boats to ship in.

We are and will be for some time to come, an agricultural surplus producing nation and for this reason we should do everything we can to encourage methods which will make our trading with other nations easier. In this respect an American merchant marine is a marketing necessity and a thing that the farmers should be vitally interested in.

With reference to the development of foreign markets it is interesting to note that the Swiss are now buying American-made Swiss cheese, because the American product is far more uniform. It seems that this is just another example of American ingenuity and salesmanship.

The Continuer is n. g.

THIS continues from last week, which is more than my Oughto did. My Oughto has got a pretty good starter, and what you call a over-ambitious stopper, but the continuer ain't operatin'.

I forgot to tell you last week that part of the bargain for the Oughto was that the salesman was goin' to give me a course in engineering so I could run the machine, but he didn't come.

I got kinda tired waitin', so I drove down in our two-passenger one-horse power rig and told him I thought the ambitious tin critter in the barn had



rest enough. And besides we, the chickens, the pigs and etc., had got through admirin' her beauty standin' still. But we would powerfully like to see her in acshun, so we kin see whether she

is what you call sweenied, or not. He said he could come, but he didn't yet. If I only kept that \$7.00 out of the \$247 he would still have at least \$7.00 worth of interest in me. This is one of the inconveniences of payin' cash.

But I've been experimentin' a little myself. I just put my foot on the button on the floor and she'd start fine. Then I'd push on the foot dingus and she'd get outa the barn fine, but when I'd take my foot off she would stop. I got her outa the barn several times that way, but every time I would have to push her back and start over again. I did that till I got tired, then I gave her her rubdown for the day and quit. Gee! but she is got a nice glossy coat. It sure is a sign of good health, and it seems to me she would be perfectly willin' to go if we understood each other better.

Anyhow, through my own endeavors I learnt how to start and how to stop, and I figure it is a lot safer to learn how to stop before you learn how to continue. 'Cause I would awfully hate to continue without stoppin'.

Some of these days I am goin' to find where that continuer is and then I will show the family and the neighbors my accomplishment.

HY SYCKLE.

I went by the field of the sluggard and lo, it was grown all over with thorns. So shall poverty come as a robber, and want as an armed man.—Prov. XXIV, 29.

More Sheep for Michigan

The Opportunities are Exceptionally Good for Profitable Sheep Production in this State

By Leo C. Reynolds

MICHIGAN for the past quarter of a century has hardly been holding her own in the sheep growing industry. In 1897 there was in round numbers 1,355,000 sheep on farms in Michigan. When we examine into other lines of industry we find that Michigan has been growing by leaps and bounds. Her population has nearly doubled. The demand for her agricultural products has vastly increased. Her tillable lands show a marked increase in production. Never before has marketing facilities been so well organized for the benefit of the sheep growing industry as today. The demand for both wool and mutton for years past has been gradually growing stronger. The American flock owners today produce about 300,000,000 pounds of wool annually which is only about one-half of the domestic consumption. Approximately 200,000 head of sheep for breeding and killing purposes were imported into this country last year.

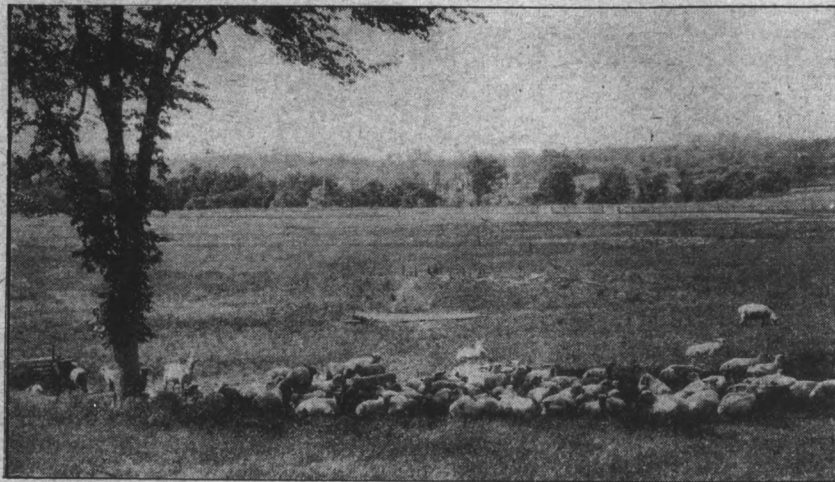
Taking the entire situation into consideration the prospects were never brighter for the profitable growing of sheep on Michigan farms than at the present time. In the central west for some time past the demand for well-bred ewes for starting new breeding flocks has been on the increase. There are several reasons for this state of affairs, but probably the foremost one is the shortage of farm labor and the need for some live stock that can convert low-priced farm-grown roughage and grain into finished marketable products at a good price. When feed is plentiful and market price below production there is always a demand for live stock, and when cattle are above the money-making line, attention invariably is directed to sheep.

Also, we should not be unmindful that the American people have been educated to demand the nice tender juicy young mutton and no longer accept the older, coarse, slow-maturing meats, thereby affording good market for the mutton products.

To obtain maximum profit from sheep husbandry on Michigan farms,

sheep of the heavy breeds that must be grown before finished for market.

It has always been a well-fixed opinion with us that more sheep should be kept on Michigan farms regardless of the price of wool or the condition of the mutton market. Market price of flock products fluctuate like other farm produce, but taking it over a series of



Most Farms Could with Profit Add a Few Sheep to It's Live Stock.

flock owners should make a thorough study of the market upon which they must ultimately dispose of their products and strive to produce the type and quality of flock products that command top prices. The medium-size, strong-backed, heavy fleshed and early maturing sheep are always in strong demand at profitable prices. It should also be kept in mind that the young early-maturing type of sheep make gains more rapidly and return greater profit above cost of production than

years sheep growing will compare very favorably with other lines of live stock husbandry. Sheep no longer should be classed as "scavengers." While they convert waste feed on the farm into profit, they have long ago won a foremost place as economic producers of profit of farm-grown roughages and grain. Sheep to return greatest profit should not be required to obtain their livelihood from parched pastures and stubble fields alone. While sheep are capable of feeding upon many worth-

less weeds and by-products on the farm they do best and prove most profitable when given consideration equal to that given the dairy cow, the growing colt and the fattening steer. Sheep do not require quite so luxuriant pasture as some kinds of farm live stock, yet they must have plenty of nutritious food to grow bone, muscle and wool.

Despite discouraging conditions, I believe now is a good time for every Michigan farmer to start a small flock of sheep, or to improve the flock already established. Sheep raising, like other farm enterprises, has its ups and downs. The man who sticks is the man who wins. Two years ago in my locality farmers paid as light as \$32 for grade breeding ewes at auction sales. Last fall equally as good stock went begging at \$8.00 per head. Periods of market depression offers good chances to start in sheep growing rather than boom-time when prices are high. A small flock of sheep on the farm will help solve the labor problem, keep the farm neat and tidy and increase the farm revenue.

It is advisable in establishing a flock of sheep to get a few good ewes and build up the business slowly, gaining experience as the business grows. Many a man has become discouraged with sheep because he went in too heavy at the start before he had gained experience in handling sheep profitably. If sheep raising is to be made profitable on high priced Michigan lands it will not only be necessary to grow the type of sheep which is capable of converting feed economically into wool and mutton, but to grow crops adapted to the soil and climatic conditions to encourage intensive and efficient agriculture.

Spray Injury and Its Control

Some Observations as to Its Cause and Some Suggestions on Making Spraying Safer

By Frank A. Wilken

WE often hear the expression, "When it isn't one thing it's another," especially when there are things to contend with. This expression can truthfully be used in connection with spraying, and undoubtedly often is by those who have a spraying job to do.

First we get a material that we think will control the insects or pests in good shape, and we no sooner get its use perfected than we find that it itself does injury. A few years ago there was nothing like Bordeaux mixture and Paris green for the control of fruit pests, but the development of Bordeaux injury caused a change to the use of lime-sulphur and arsenate of lead. This combination looked like the real thing until we come to realize that lime-sulphur injury is sometimes a serious proposition.

The writer has watched with interest the change from the use of Bordeaux mixture to that of lime-sulphur, and also the developments with reference to the lime-sulphur injury. His observations and experiences are given below with the hope that they may contain some suggestions of value with reference to eliminating the trouble.

The first time I noticed lime-sulphur injury in my own spraying work was when the exposed parts of the end trees in the rows had some leaf burning. For a long time this was puzzling, as the rest of the trees and the other parts of the end trees were free from injury. At that time the ordinary large disc nozzle was used, so the



Spray Injury Often Causes Heavy Losses in Commercial Orchards.

force of the spray alone could not be considered as the cause of the trouble.

The only way the cause of the injury could be accounted for was that while the team was turning to go down another row the spray rod was kept playing on those end trees at very close range. This gave these raw ends an unusual amount of spray quite forcefully applied. These row ends were also more exposed to the heat of the sun.

At another time, when spraying during very hot weather with the spray gun type of nozzle, the sides of the trees most exposed to the sun were quite severely injured, and in many cases the apples themselves had spots from one inch to two inches in diam-

eter that were brown and soft with injury. Invariably these spots were on the exposed sides of the apples.

Two years ago the injury was noted again, more especially on pear trees, and the cause of it studied. In this case also, the injury was on the sunny side of the tree and confined to those parts of the trees which were susceptible to the force of the spray. Here it was noted that the sides or the tips of the leaves that were first to be hit by the force of the spray were the ones injured. This spraying was done with a spray gun and hot sultry weather followed it.

Following this case of injury some tests were made with lime-sulphur and the various arsenates to see if any

conclusions could be reached with reference to the injury. These tests were made on apple and Japanese plum trees. The Japanese plums were selected as they are usually very susceptible to spray injury. The lime-sulphur was used at the rate of one to fifty in one case, and one to a hundred in another. It was also used in a combination with arsenate of lead and calcium arsenate. The two poisons were also used alone to determine whether they would cause injury themselves.

The spray was applied with a small outfit, so the force of the spray was not nearly so great as a power outfit and the spray gun, but parts of the tree were drenched, while other parts were just covered with a fine spray.

On none of these test plots was there any spray injury evident, even when lime-sulphur was used at the strength of one to fifty on Japanese plums. This seemed to indicate that a drenching of a tree with lime-sulphur or any of the poisons would not cause serious injury. But the experiences mentioned before would indicate that the force of the spray in combination with the heat of the sun is what would cause it. Those parts of the trees which were not in the path of the direct force of the spray showed no evidences of spray injury. Neither were those parts of the tree affected which were protected from the direct heat of the sun. But even with the old disc type of nozzle, when the spray rod was held too closely to the tree,

(Continued on page 674).

LATE AGRICULTURAL NEWS

WASHINGTON MILK LAW.

THE new milk law prepared for the city of Washington provides for the annual testing of cattle in all herds producing milk for the Washington supply, and where tubercular cattle are found in any herd the tuberculin test must be applied semi-annually until tuberculosis is entirely eradicated. The health officer is empowered to seize all milk or cream coming into the city in violation of the act. The annual issuance of permits is required.

IMMIGRATION LAW.

AN amendment to the immigration law which would exempt from the three per cent restriction, immigrants coming to this country with the professed intention of becoming farmers, has been introduced in the house by Representative Steenerson of Minnesota.

The bill provides that aliens experienced in agriculture, upon filing on embarkation a sworn statement of their intention to settle upon public land and cultivate it, or to farm other property, would be admitted without regard to present limitations.

Representatives of the farmers are not in sympathy with this proposition, saying that it will provide a loophole which will practically nullify the three per cent restriction law. They also feel that the American farmers already have enough competition to contend with without importing more foreigners to compete with them on our public lands. The bill will undoubtedly have some support from influential interests who are promoting great government irrigation projects and swamp land development.

TO CONTROL ONION MAGGOTS.

A NEW method of controlling onion maggots has been used with success in Oregon. The method consists of using cull onions for traps for the maggots.

"We plant the cull onions from the previous year's crop in rows throughout the onion field," says A. L. Lovett, entomologist at the Oregon Agricultural College. "At seeding time the growers omit planting every one hundredth row and in this they plant the cull onions, putting them in at a depth of from two and one-half to four inches, and six inches apart in the row. The onions grow much more rapidly than the seedlings and have quite a bit of top growth at the time the adult flies appear in the field. These onions serve as an attractive lure for the flies, and almost 100 per cent of the eggs are deposited on those onion rows."

When the cull onions are filled with eggs, the onions are removed and destroyed. This work is done during the first half of June. From early June to harvest time, other insects keep the maggots in check. Plants infested after the culls are removed are not thinned out, but left as traps for the rest of the season.

That the results of this method are satisfactory is evident from the fact that in one particular field, only one maggot was found in 555 onions, outside of the cull traps.—E. A. Kirkpatrick.

M. A. C. STUDENTS' PAGEANT.

THE fourth annual pageant will be given by students of the Michigan Agricultural College in the Forest of Arden during commencement week in June.

The theme of this pageant will be the development of games and dances. Their evolution from religious ceremonial dances of the ancient races to modern steps will be depicted.

One feature of the program will be a number in which eighteen men, a representative from each society and one independent, will interpret the athletic games and dances of Greece and Rome. This will include wrestling, discus and javelin throwing, and other sports in which those nations excelled.

Music for the entertainment will be furnished by the college orchestra, instead of by the band, as has been the custom heretofore.

EDISON FARMER FINANCE PLAN.

A NEW plan of long-term credits to farmers is proposed by Thomas A. Edison. Mr. Edison recently came to Washington, and through an interview with Senator Arthur Capper a conference was arranged with the special committee of the senatorial agricultural block now considering the matter of farm credits.

In a brief submitted to the farm bloc committee, Mr. Edison presented some of the salient features in his proposition:

"Upon receipt of any commodity and after proper weighing, a preliminary receipt for the same is to be given. It is then to be manipulated or graded and three sets of sealed samples are taken, one being given to the owner and two being kept by the government. The government thereupon will issue a receipt in duplicate for the commodity, one receipt setting forth the quantity and grade of the commodity.

"The other receipts show the same

thing and in addition give the holder the right to receive in federal reserve currency at any national bank he may choose, fifty per cent of the average value of the commodity as is determined by the prices over a period of twenty-five years without any charge other than the cost of service and a contribution to the sinking fund.

"For this the bank may make a definite charge for obtaining the currency from the district reserve bank. The duplicate receipt is kept by the owner and contains his equity over and above the loan of fifty per cent. This duplicate is available for a loan at a national bank or it may be sold on the exchanges if held by the farmer until he desires to sell. Both certificates may be split up in fractions at the pleasure of the administration."

NURSERY LICENSE REGULATION.

THE state law governing the sale of nursery stock requires that all persons who grow for sale or make a business of selling trees, shrubs, vines, fruit plants, hardy herbaceous perennials, also cuttings, grafts, scions, and buds for purposes of propagation, shall take out a license and have the stock inspected each year.

To secure a license, a bond for \$1,000, signed either by a surety company or by two personal sureties and conditioned on only selling stock which has received a certificate of inspection, shall be filed and a fee of \$5.00 paid to this office. The stock will be inspected before the shipping season and if it is found to be free from dangerous insects and diseases, a certificate of inspection will be issued. A copy of this certificate must

be given with each order of nursery stock shipped or sold. Persons who are not nurserymen but who wish to sell nursery stock grown by other licensed nurserymen, must take out a license as above, and on the payment of an additional fee of \$1.00, and the filing of certificates showing that the nurseries from whom the stock is secured have been inspected, may secure a certificate of inspection for use on the stock.

Farmers or fruit growers are allowed to sell their surplus strawberry and red raspberry plants to their neighbors without taking out a license, providing they do not advertise them or in other ways make a business of selling them, but growers of black raspberry plants and grape plants must take out a license in order to sell them, as these are actually propagated by the grower, while strawberry and red raspberry plants are natural layers.—L. R. T.

SOY-BEAN MEAL FOR DAIRY COWS.

DAIRYMEN are becoming interested in soy-beans. Many are mixing the soy-beans with their corn for making silage, while others are sowing the bean to be harvested as a hay crop. Still others are maturing the crop and grinding the beans to provide protein in the dairy feed. L. V. Wilson, dairy specialist of Minnesota, states that they have been feeding from one to three pounds of soy-bean meal daily to their highest-producing cows. He states there is a great future for economical dairying if the present apparent possibilities of this bean as a protein provided are realized.

NEARLY DOUBLED YIELD.

HERE is some information that will be valuable to farmers keeping cows. Reports have come from the records of a bull association, which has been running successfully from 1918. The sides used in this association are from cows which averaged 679 pounds of butter-fat per year. The influence of these sires on the herds of the association members is remarkable. Here is the result of better breeding to date:

Average of original cows, 4,497 lbs. milk; 199 lbs. butter-fat; daughters' average, 4,844 lbs. milk; 229 lbs. butter-fat; granddaughters' average, 7,745 lbs. milk; 388 lbs. butter-fat; increase of milk, 3,248 lbs.; increase of butter-fat, 189 lbs.

In two generations the use of pure-bred sires has practically doubled the yield of butter-fat, while costs have been increased but very little.

FEEDING SUNFLOWER SILAGE.

THE Colorado station has just completed some steer-feeding tests with sunflower silage and the following summary is given: The most economical returns were secured when sunflower silage was fed in a ration with dried molasses-beet-pulp, cottonseed cake and alfalfa.

In comparing the value of barley with corn, it was found that the first-named grain had eighty per cent of the feeding value of corn when fed with sunflower silage, cake and alfalfa.

Beet molasses did not seem to make a good combination when used with sunflower silage. Steers fed this feed were not thrifty. During the last fifty days of the feeding, corn was added and during that time satisfactory gains were produced.



Wednesday, May 24.

FOUR army airplanes were wrecked when caught in a storm near Oklahoma City.—It is rumored that the British government will ask a plan to evacuate Russian territory.—Secretary Hughes has to refuse help to the many calls for assistance from European nations.—The new German ambassador forgets to bring his credentials, and, therefore, cannot meet President Harding.

Thursday, May 25.

TRUSTEES of the American Medical Association has asked the government to sell them whiskey for medical purposes.—Protopapadakis, former minister of finance in the Greek cabinet, has been appointed premier. He is the third premier Greece has had in a week.—Six are killed in one day in Belfast rioting.

Friday, May 26.

CITIZENS of Dearborn, Michigan, Henry Ford's home town, are endeavoring to start a Ford presidential boom.—It is reported that the Standard and Gulf oil corporations will form a \$766,000,000 merger.—The British steamship Egypt sunk off the isle of Ushant and 102 passengers and crew were drowned.

Saturday, May 27.

ITALY rejects a treaty with the Russian Soviet government.—In Georgia a concern is trying to sell rural mail carriers automobiles by mail at

\$100 each.—The West Virginia electric power tower at Charleston was dynamited by striking miners, and as a result eight mines were put out of commission.

Sunday, May 28.

IT is reported that Charles R. Crane, of Chicago, has been sentenced to twenty years imprisonment by the French government for supposedly inciting a revolt.—President Harding is seeking a waterways treaty with Canada.—The United States government recently sold seventy-nine homes in Wyandotte, erected during the war activities.

Monday, May 29.

THE Russian Red forces in Siberia are attacking the Japanese expeditionary forces.—The French Premier stated that France will invade and occupy the Ruhr district of Germany if that nation fails to meet the reparation payments due May 31.—Wind and rain storm in Louisiana destroyed over a hundred oil derricks in that region.

Tuesday, May 30.

THE Yanks who are now leaving mine district have three days' leave to witness the Oberammergau Passion Play.—It is reported that Germany's prosperity is greatly overestimated.—The Detroit commissioner of public works says that help is now so scarce that he cannot get street laborers.—Secretary of Agriculture Wallace denies the reports that he has resigned.

Swarming And It's Control

Some Practical Suggestions on Swarm Management.

By Geo. W. Price

THE normal colony of bees in the spring consists of a queen and several thousand workers. As the weather grows warmer the queen commences to lay. When the young bees begin to emerge the quantity of brood is increased and it gradually keeps on increasing as the bees bring in more nectar and pollen. Soon the hive is nearly full of bees and brood. The queen then starts to lay in the drone cells. The colony keeps on increasing until it is too large for one hive. The bees then begin to build queen cells. A queen cell is different from other cells in that it is larger and hangs on the comb vertically. The same egg that produces a worker could produce a queen. The queen larvae receive special food, however, and that is what makes the difference. When the larvae are grown to full size they are sealed up. The colony is then ready to swarm, and at a favorable time the old queen and most of the bees leave for new quarters.

Bad weather during the swarming season may stop swarming, as bees will not swarm unless the weather is nice. It is very seldom, however, that there is much bad weather at swarming time.

The swarm, on leaving the hive, circles around in the air a few minutes and then clusters a short distance away. There it remains for a short time before flying away to the new home. They seldom get a chance to go farther, however.

If increase is not desired, the swarm may be returned, without the queen, to the old hive and all the queen cells destroyed, excepting one good one.

When increase is desired the old hive should be moved to one side and the swarm hived in a new hive on the old stand. This forces the field bees of the parent colony to join the swarm. The supers on the old hive should be removed and placed on the new one. It is a good plan to destroy all queen cells but one in the parent colony, or

else destroy them all and requeen. Otherwise the colony may cast another swarm.

Swarms should be hived on full sheets of foundation rather than drawn comb. Then the honey brought in is stored in the supers, just where it is wanted. As the foundation is drawn out in the brood chamber the queen occupies every cell as soon as it is built, so there is no honey stored there for some time. Of course, there is not much brood reared, but it is not needed at this time.

Many of the best bee-keepers clip

the hive, the queen may be freed among them.

Where the old method of hiving swarms is used it is a good plan to have some kind of a swarm-catching device on a long pole to reach swarms that cluster up high. A bushel basket on a long pole will do.

In preventing swarming, much depends on whether the apiary is run for comb or extracted honey. It is much easier to prevent swarming when running for extracted honey. Then there is a big difference in colonies, some colonies go through the season and

comb honey sections so the extracted honey producer does not have as much trouble as the comb honey man. If he adds extra supers as fast as the bees need them and gives plenty of shade and ventilation there will not be much swarming. Of course, the room should be provided just before the bees need it, and not withheld until they are crowded, or they may start queen cells.

Some breeders use the Quinby hive which takes a frame eighteen and a half by eleven and a quarter. The users of this hive claim that it gives the bees and queen so much room that they have very little desire to swarm. Anyone who tries this hive usually finds this true. Others use a two-story Langstroth brood chamber. This extra story should not be put on until the lower one is almost full of brood. It is a good plan to take a couple of frames of brood from below and put them in the upper story, putting the frames of empty comb in their places. The queen goes above much more readily when this is done.

About a week before the honey flow begins the frames should be sorted, the sealed brood put in the upper story and the queen and the rest of the frames in the lower one. A queen excluder should be placed between the two stories. The brood hatching out in the upper story gives room for the first honey that comes in, and the queen usually has room enough to lay in the lower one.

In the production of comb honey it requires considerable skill to keep the colonies strong and busy in the supers, and prevent swarming at the same time. The small sections are unnatural and the bees sometimes sulk for days before beginning work in them. During this time queen cells may be started. It is a good plan to save a few sections that were not completed the year before and put two or three of these in the center of each super.

(Continued on page 562).



Control of Swarming is a Great Factor in Successful Bee Management.

one wing of each of their queens. Where this is done the swarm issues just the same, but the queen, being unable to fly, flutters around on the ground in front of the hive. The swarm goes a short distance, but upon discovering that the queen is not present, returns to the hive.

While the swarm is gone, the queen is caught and caged, the old hive moved to a new location and a new one put in its place. When the swarm comes back and the bees start to enter

never seem to think of swarming, while others seem determined to swarm no matter what is done to stop them. It may be necessary to dequeen this kind of colony. Dequeening will usually stop swarming when all else fails. It is not generally used, however, except as a last resort, because a queenless colony does not seem to work as well as one with a queen.

The season seems to have some effect on swarming. The bees would much rather work in frames than in

The Control of Heat in Hay

Curing and It's Relation To Spontaneous Combustion in Hay

THE elimination of excessive heating and spontaneous combustion in mows and stacks may be done away with almost entirely if hay is put up only when properly cured. The heating process begins as a fermentation produced by the growth of bacteria in moist hay. When conditions are right the temperature mounts until the organisms are killed; from then on the heating is the result of chemical action—a slow oxidation when it is away from contact with the air and a rapid oxidation, or fire, when the heating area breaks through to the open air.

When one of these fires breaks out there may be time to save the live stock, unless it occurs without warning in the night, but there is small chance of saving the structure and the feed stored in it. The danger of spontaneous combustion must be anticipated before the feed is stored. Most farmers know when hay is cured properly, but because of threatening weather or some other reason some men compromise and put in feed that still contains too much moisture, sometimes giving themselves a false sense of security by scattering salt in the mow or stack. Moisture is the controlling factor, whether it is rain that

has fallen on the cut hay, or water within the stems makes no difference. If the moisture content is low enough the hay will not heat to the danger point.

Alfalfa and clover and other hays made from rather succulent plants cause the most trouble from heating, and they should be given particular care in curing. In some parts of the country where rains are frequent at haying time it is hard to get the hay into ideal condition. Some farmers cure it in cocks and use canvas caps, but this is expensive in time and materials. In humid regions the danger from spontaneous combustion in mows and stacks may be lessened by the use of a box-like ventilator, a skeleton tube twelve to fifteen inches square, and of

any length desired, depending upon the size of the mow or stack. The corners are two-by-fours and the cross-piece one-by-three's placed close enough together to keep the hay from falling through and blocking the air passage. Diagonal braces are placed in the box at intervals to keep it from collapsing under the weight of the hay. These ventilators are usually placed across the mow at intervals of seven or eight feet.

In some localities curing frames or tripods are used to hasten curing. They keep the hay loose and up off the ground so that the air may circulate freely through it.

When a mow or stack has become badly heated there is a strong temptation to go in and stir up the hay,

but often this is the worst thing that can be done. Admitting air to the hot center of fermentation may be just the thing needed to start a fire. If air does not get in, a part of the hay may be charred without starting a fire; gradually the mow cools and the only loss is the hay that has been carbonized. However, in the early stages when the hay is heating it is sometimes advisable to move hay from one mow to another or to restack. But be sure it is not too hot.

Slow combustion inside the mow can be detected by a peculiar sooty odor or by smoke that is irritating to the eyes.

Danger of spontaneous combustion is not confined to hay. It may occur in damp fodder and straw, as well as in bins of moist grains and seeds. Cloths, waste, and sawdust saturated with organic oil of any kind—linseed or cottonseed oil, for examples—are even more subject to spontaneous combustion than hay. Such oily materials should not be allowed to accumulate or be left piled up in corners where the heat generated can not escape. Oiled mops or dust cloths used in the house and oily waste or rags used in the garage or about the barns should always be kept in metal containers with air-tight metal covers.



OUR SERVICE DEPARTMENT

DOG TAX.

We have a Collie pup eight months old, and we are told that we must pay taxes in advance for the coming year. If not paid by June 15, what legal action can be taken against owner, and when?—H. W. C.

Being over four months old the dog is subject to tax; and if the tax is not paid it is the duty of the proper office to kill the dog.—J. R. R.

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The sheriff is protected in removing the goods to the street, and is under no duty to provide storage, sufficient opportunity to remove them and protect them being given to the owner; and it has even been held in New York that the officer is not liable for setting the goods out in the rain, because he has no right to delay execution of the process for better weather. The proper method is to notify the tenant of the time of removal so that he can protect them.—J. R. R.

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Kerosene will kill quantities of the larvae in the manure pile, but there is always a danger from fire and it makes the manure unfit to use as a fertilizer.

Chloride of lime or cresol may also be used but if used in the proper amounts may prove a little expensive.

Borax when used at the rate of one pound to eight bushels of material will kill most of the larvae and will not spoil it for use as fertilizer.

Anyone can make a good compound for killing larvae in the following manner, but great care should be used in its preparation as it is corrosive as well as poisonous.

Formula.—Dissolve one-half pound of caustic potash in one-half pint of water, let stand several hours until dissolved and cold; add this to one quart of raw linseed oil contained in an earthenware vessel, stirring the while, and repeat the stirring process at intervals of about one hour for from four to five hours, then let stand over night. This process will result in a soap to which must now be added slowly, while stirring, one and a quarter quarts of commercial cresol, which will gradually dissolve the soap. For use, this compound must be diluted at the rate of one part to thirty of water. The quantity given above will produce from twelve to fifteen gallons. Apply to manure. This liquid is also serviceable as a germicide when sprayed about poultry houses used at the rate

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I have heard that butter made of shortening and cream keeps better than if made of cream alone. If this is correct, can you give me the proportions used?—P. S.

Investigation work in butter-making has shown that the best butter can be made from pure sweet cream. During the war, butter was made from sweet cream, known as sweet butter, and kept for months under good conditions. The addition of shortening is not a common practice and in the light of the experience of our best butter makers, the practice should be discontinued. Your butter should keep well if the milk is separated immediately after milking before it has an opportunity to take up contaminating odors and if the cream is cooled before being mixed with cold cream and the cream ripened quickly and churned often.—W.

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Will you please print a recipe for outside whitewash? Can the wash be colored? How often does one have to renew it and must it be used in a few hours after it is mixed?—A. W. S.

Following are three formulas for outside whitewash:

Weatherproof Whitewash.

One bushel of lime slaked in twelve gallons of hot water; two pounds of common table salt and one pound of sulphate of zinc dissolved in two gallons of boiling water; two gallons of skim-milk. Mix one and two together, stir thoroughly, add three and stir thoroughly.

Government Whitewash for Outside Exposure.

Slake half bushel of lime with six gallons of boiling water. Keep covered while slaking, strain and add one peck of salt dissolved in hot water, three pounds of rice flour thinned to a thin paste with cold water, a half pound of Spanish whiting, and one pound of clear glue dissolved in hot water.

Lighthouse Whitewash.

Sixty-two pounds of quicklime slaked in twelve gallons of hot water; twelve pounds of rock salt dissolved in six gallons of boiling water; six pounds of Portland cement. Pour the second ingredient into the first, and add the third. Add one ounce of alum to each gallon of water.

For a gloss finish, one bar of common laundry soap dissolved in one gallon of boiling water, add to five gallons of whitewash.

Whitewash may be made a permanent gray color by adding powdered lampblack.

Venetian red, chrome yellow, burnt sienna and other colors in powdered form may be added to whitewash, but the permanency of the color is very doubtful because of the action of the lime.

The frequency with which whitewash is to be renewed depends upon many factors—the surface to which it is applied, the permanency of the mixture, the care with which it is applied, and the amount of exposure that it receives, so it is difficult to state just how often it would need to be renewed.

Whitewash may be kept a few weeks if stored in a cool place.—F. E. F.

SALE OF EXEMPT PROPERTY.

A party is in debt to another party, and lets second party have a spray rig and two cows to pay for it. There was a bill of sale drawn up and just signed by the two men. Isn't the wife supposed to sign bill of sale? There was a place for witness to sign, but no witness signed. The debt was overpaid \$25. Could indebted party get one cow back as it is not paid for?—M. T.

Two cows are exempt to householders from execution; and the statute requires mortgages and bills of sale of exempt property given as security to be signed by the wife; but if a man has several cows he may give a mortgage on any, excluding two without his wife joining, for the right of selection is in him, not in her. Moreover, the statute does not refer to absolute sales at all; and such sales even of exempt personal property, may be made by the husband, if owner, without the consent of the wife, either written or oral. A witness is not necessary to a bill of sale, and the safe, if accompanied by delivery or of less than \$50 in value, does not need to be by writing.—J. R.

GETTING RID OF SAND BURRS.

Please tell me how to get rid of sand burrs.—F. W. K.

Sand burrs are annual plants, that is, all the roots do not live over winter but the plants come up each spring from the seeds produced in the year before. Small patches of this weed when they appear, should be hand-pulled or cut out with a hoe, taking care not to wait until the burrs are loose and apt to fall but doing this as early as the plants are recognizable. The plants should then be burned because the burrs will sometimes mature even after the plants are pulled up. If a large field is infested and it is possible to burn it over, this process will destroy a large proportion of the seeds. The field should then be put in thorough cultivation and well fertilized and can then be planted to some better crop, particularly some crop that will make a thick growth so as to crowd out this pest. If the soil is not too light, alfalfa is good, or millet can be sown broadcast or in close drills. The whole secret of control of this weed lies in keeping it from going to seed at all.—E. A. B.

SWARMING AND IT'S CONTROL.

(Continued from page 651).

The bees will start work in these partly drawn sections sooner than if the super contained only sections with foundation. Another plan is to put a shallow extracting frame full of comb on each side of the super. As soon as the first honey comes in the bees store it in the comb and then the work spreads to the sections.

Plenty of shade helps to prevent swarming. Of course, natural shade is the best and quite a few apiaries are located in orchards. Where there is no natural shade it is a good plan to use shade boards made of rough lumber.

Ventilation also helps to prevent swarming. During the honey flow the entrance should be the full width of the hive and if the weather is very warm it is well to raise the hive from the bottom-board with seven-eighth-inch blocks at each corner.

A colony with a young queen seems much less inclined to swarm than one in which the queen is a year or more old. Many of the best beekeepers requeen with young queens just before swarming time. When this is done laying queens should always be given as brood-rearing will be suspended for a time if virgins are used.

Manipulation of the supers so that there is no break in the work helps to prevent swarming and also stimulates storing. If only one super is given and no more added until it is completed, the bees will become crowded and may start cells. After work is well started in the first super another should be placed underneath it. When work is well begun in the second super and the honey flow promises to continue, a third super may be given, placing it next to the brood chamber, the first super next, and the second one on top. Toward the end of the flow the supers added should be placed on top. Then the bees do not use them unless they need them. Otherwise a lot of sections might be left unfinished.

Probably the plan most used to prevent swarming is that of cutting out the queen cells. This necessitates going over the colonies every week or ten days. Where one has a great many colonies to care for this makes considerable work so the plan is more adapted to the small beekeeper. The strong colonies should be looked over a little before the time they are expected to start cells. It is not necessary to look over the whole apiary, for if the strong colonies have not started cells the medium and weak have not done so. If cells with eggs or young larvae are found, they should be crushed with the end of the finger or hive tool. It is not necessary to cut them clear out. When cells are found in the strong colonies, the whole apiary should be gone over and any cells crushed. In about a week or ten days the apiary is gone over again. Some colonies will be found to give up the notion of swarming after the cells have been killed once or twice, while others have no intention of doing so. Some other method, possibly dequeening, must be used on these latter.

Some effort has been made toward eliminating swarming by breeding from those colonies which show the least tendency to swarm. Many beekeepers, after years of careful selection, find that they have greatly reduced the percentage of swarms. Of course, they have not done away with swarming entirely, but it may be that some day a strain of non-swarming bees will be developed.

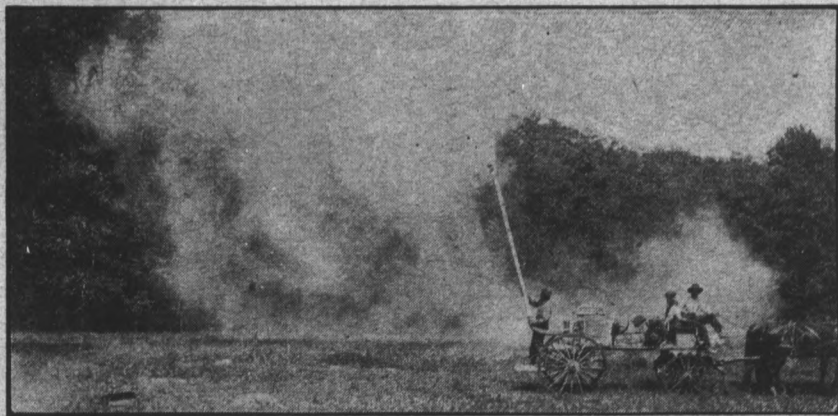
Less Planting---More Culture

By Hilda Richmond

SINCE we plant less ground in garden truck and cultivate the smaller patch more carefully and more frequently we enjoy more fruits for our labor. Time was when in common with other farmers we had to have a "truck patch" that was really a small field. Into that truck patch went everything that everybody else raised, without regard to likes and dislikes, and also without regard to the ability to cultivate it. But the war, which taught so many lessons, eliminated all the vegetables we do not like and made us more careful about plowing up a big expanse of soil to grow up to weeds and sickly vegetables. We never cared a great deal for cabbage, yet we always expected to put out several hundred plants, trusting to the survival of the fittest rather than to any great care, simply because we did not crave cabbage. Now we plant no cabbage at all, but buy a few heads when

spinach and all the other things that must be sown in July or August. If there is a place not needed for those crops it is promptly sown to turnips, as turnips will drown out weeds and can be fed to stock. The fertility of the soil for the two or three crops is kept up with well-rotted manure, but really it is less trouble and expense to do that than to fertilize a big field once. The soil is as mellow as ashes and if weeds do appear they are very promptly used as green fertilizer.

It may sound like a fairy story to some folks to say that you can get twice as much off a small plot well tended as a big one skimmed over, but it is true. We even plant fewer potatoes and cucumbers and such things as formerly, though these crops go out in the field rather than in the garden proper. The Japanese with their wonderful gardens, depend upon small plots and we may well learn a lesson



When the Inability of Getting Spraying Done at the Proper Time is the Greatest Obstacle in Spraying, the Dust Sprayer proves Valuable.

the cabbage notion strikes us once in a long time.

The spring garden consists of frequent plantings of lettuce, spinach, onions, early peas, beets, radishes and snap beans. These with the permanent asparagus are enjoyed until the middle of June when the next beans, peas, beets, pickles, lima beans, tomatoes, roasting ears, kohlrabi and such things come in quick succession. Of course, the fall brings a wealth of richness in the garden, but it also brings the last planting of snap beans, peas, lettuce, endive, onions and beets as well as the cultivation of the celery of which we are very fond. More time and energy are put on the corn, tomatoes and celery than anything else because we depend upon them more for canning and for winter use. This season we used the last celery in January and, of course, the canned things last until fresh ones come.

By having the smaller garden it does not become a drag, but is a real pleasure. Formerly we felt that we must have at least twice as many tomato plants as we needed in order to have plenty to give away to friends, but we have more to give away with the small patch than with the large one. Also we have more time to try new varieties. The vines are pruned just as trees are pruned, and while we do not use the stakes we thin so that they can have plenty of light and air. The same might be said of lima beans. We used to have poles and poles to care for, but now a smaller bed with better care yields more than in other years.

There is less trouble with weeds now than in the big patch. When the early peas, lettuce, radishes and such crops are done the ground is cleaned out and made ready for endive, later plantings of onions, the fall radishes,

from them as they fertilize and cultivate. With help so hard to get, and the farmers rushed to death, the proposition of a small garden with better and more vegetables should appear strongly, for the ladies and the children like to work in a wellkept truck patch when they abhor a big weed grown field. Cut the garden in half and see if you do not increase production without increasing work. We know, for we have tried it.

GARDEN NOTES.

PLANT seed for the late cabbage crop at once. See that the seedbed is fine and moist. Danish Ballhead is the most popular variety for winter storage. Drumhead Savoy is a high quality variety and is excellent for the home garden.

The first early plantings of garden peas are growing well now. Time to make another planting of the mid-season and late sweet wrinkle seeded sorts. Allow eighteen to twenty-four inches between the row for the dwarf varieties. The tall late varieties need at least three or four feet between rows. These should be provided with brush, wire netting, or something similar, for support.

Start the cultivator going early. It conserves moisture and means bigger and better crops.

Most people sow seed too thickly, consequently many crops require some thinning. When the plants of lettuce, radishes, onions, beets, carrots, etc., are about two inches high, they should be thinned until only the best remain, about two or three inches apart. Thinning allows the plants to develop larger roots, gives the sunlight a chance, and better plants result.

For slugs on roses there is nothing better than a thorough spraying or dusting with arsenate of lead.



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Slake half bushel of lime with six gallons of boiling water. Keep covered while slaking, strain and add one peck of salt dissolved in hot water, three pounds of rice flour thinned to a thin paste with cold water, a half pound of Spanish whiting, and one pound of clear glue dissolved in hot water.

Lighthouse Whitewash.

Sixty-two pounds of quicklime slaked in twelve gallons of hot water; twelve pounds of rock salt dissolved in six gallons of boiling water; six pounds of Portland cement. Pour the second ingredient into the first, and add the third. Add one ounce of alum to each gallon of water.

For a gloss finish, one bar of common laundry soap dissolved in one gallon of boiling water, add to five gallons of whitewash.

Whitewash may be made a permanent gray color by adding powdered lampblack.

Venetian red, chrome yellow, burnt sienna and other colors in powdered form may be added to whitewash, but the permanency of the color is very doubtful because of the action of the lime.

The frequency with which whitewash is to be renewed depends upon many factors—the surface to which it is applied, the permanency of the mixture, the care with which it is applied, and the amount of exposure that it receives, so it is difficult to state just how often it would need to be renewed.

Whitewash may be kept a few weeks if stored in a cool place.—F. E. F.

SALE OF EXEMPT PROPERTY.

A party is in debt to another party, and lets second party have a spray rig and two cows to pay for it. There was a bill of sale drawn up and just signed by the two men. Isn't the wife supposed to sign bill of sale? There was a place for witness to sign, but no witness signed. The debt was overpaid \$25. Could indebted party get one cow back as it is not paid for?—M. T.

Two cows are exempt to householders from execution; and the statute requires mortgages and bills of sale of exempt property given as security to be signed by the wife; but if a man has several cows he may give a mortgage on any, excluding two without his wife joining, for the right of selection is in him, not in her. Moreover, the statute does not refer to absolute sales at all; and such sales even of exempt personal property, may be made by the husband, if owner, without the consent of the wife, either written or oral. A witness is not necessary to a bill of sale, and the safe, if accompanied by delivery or of less than \$50 in value, does not need to be by writing.—J. R.

GETTING RID OF SAND BURRS.

Please tell me how to get rid of sand burrs.—F. W. K.

Sand burrs are annual plants, that is, all the roots do not live over winter but the plants come up each spring from the seeds produced in the year before. Small patches of this weed when they appear, should be hand-pulled or cut out with a hoe, taking care not to wait until the burrs are loose and apt to fall but doing this as early as the plants are recognizable. The plants should then be burned because the burrs will sometimes mature even after the plants are pulled up. If a large field is infested and it is possible to burn it over, this process will destroy a large proportion of the seeds. The field should then be put in thorough cultivation and well fertilized and can then be planted to some better crop, particularly some crop that will make a thick growth so as to crowd out this pest. If the soil is not too light, alfalfa is good, or millet can be sown broadcast or in close drills. The whole secret of control of this weed lies in keeping it from going to seed at all.—E. A. B.

SWARMING AND IT'S CONTROL.

(Continued from page 651).

The bees will start work in these partly drawn sections sooner than if the super contained only sections with foundation. Another plan is to put a shallow extracting frame full of comb on each side of the super. As soon as the first honey comes in the bees store it in the comb and then the work spreads to the sections.

Plenty of shade helps to prevent swarming. Of course, natural shade is the best and quite a few apiaries are located in orchards. Where there is no natural shade it is a good plan to use shade boards made of rough lumber.

Ventilation also helps to prevent swarming. During the honey flow the entrance should be the full width of the hive and if the weather is very warm it is well to raise the hive from the bottom-board with seven-eighth-inch blocks at each corner.

A colony with a young queen seems much less inclined to swarm than one in which the queen is a year or more old. Many of the best beekeepers requeen with young queens just before swarming time. When this is done laying queens should always be given as brood-rearing will be suspended for a time if virgins are used.

Manipulation of the supers so that there is no break in the work helps to prevent swarming and also stimulates storing. If only one super is given and no more added until it is completed, the bees will become crowded and may start cells. After work is well started in the first super another should be placed underneath it. When work is well begun in the second super and the honey flow promises to continue, a third super may be given, placing it next to the brood chamber, the first super next, and the second one on top. Toward the end of the flow the supers added should be placed on top. Then the bees do not use them unless they need them. Otherwise a lot of sections might be left unfinished.

Probably the plan most used to prevent swarming is that of cutting out the queen cells. This necessitates going over the colonies every week or ten days. Where one has a great many colonies to care for this makes considerable work so the plan is more adapted to the small beekeeper. The strong colonies should be looked over a little before the time they are expected to start cells. It is not necessary to look over the whole apiary, for if the strong colonies have not started cells the medium and weak have not done so. If cells with eggs or young larvae are found, they should be crushed with the end of the finger or hive tool. It is not necessary to cut them clear out. When cells are found in the strong colonies, the whole apiary should be gone over and any cells crushed. In about a week or ten days the apiary is gone over again. Some colonies will be found to give up the notion of swarming after the cells have been killed once or twice, while others have no intention of doing so. Some other method, possibly dequeening, must be used on these latter.

Some effort has been made toward eliminating swarming by breeding from those colonies which show the least tendency to swarm. Many beekeepers, after years of careful selection, find that they have greatly reduced the percentage of swarms. Of course, they have not done away with swarming entirely, but it may be that some day a strain of non-swarming bees will be developed.

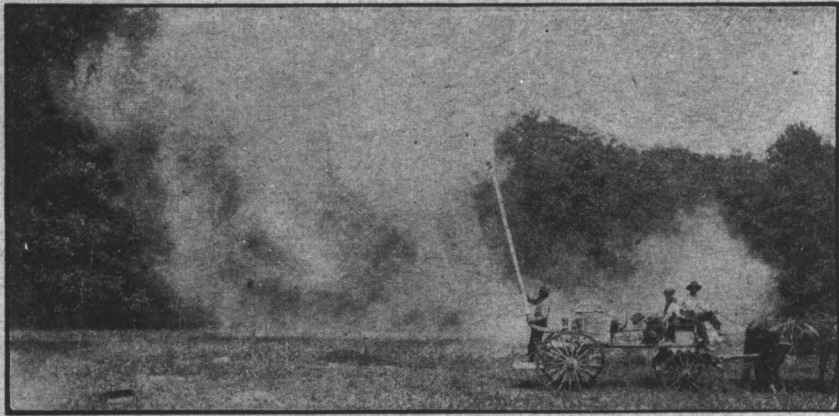
Less Planting---More Culture

By Hilda Richmond

SINCE we plant less ground in garden truck and cultivate the smaller patch more carefully and more frequently we enjoy more fruits for our labor. Time was when in common with other farmers we had to have a "truck patch" that was really a small field. Into that truck patch went everything that everybody else raised, without regard to likes and dislikes, and also without regard to the ability to cultivate it. But the war, which taught so many lessons, eliminated all the vegetables we do not like and made us more careful about plowing up a big expanse of soil to grow up to weeds and sickly vegetables. We never cared a great deal for cabbage, yet we always expected to put out several hundred plants, trusting to the survival of the fittest rather than to any great care, simply because we did not crave cabbage. Now we plant no cabbage at all, but buy a few heads when

spinach and all the other things that must be sown in July or August. If there is a place not needed for those crops it is promptly sown to turnips, as turnips will drown out weeds and can be fed to stock. The fertility of the soil for the two or three crops is kept up with well-rotted manure, but really it is less trouble and expense to do that than to fertilize a big field once. The soil is as mellow as ashes and if weeds do appear they are very promptly used as green fertilizer.

It may sound like a fairy story to some folks to say that you can get twice as much off a small plot well tended as a big one skimmed over, but it is true. We even plant fewer potatoes and cucumbers and such things as formerly, though these crops go out in the field rather than in the garden proper. The Japanese with their wonderful gardens, depend upon small plots and we may well learn a lesson



When the Inability of Getting Spraying Done at the Proper Time is the Greatest Obstacle in Spraying, the Dust Sprayer proves Valuable.

the cabbage notion strikes us once in a long time.

The spring garden consists of frequent plantings of lettuce, spinach, onions, early peas, beets, radishes and snap beans. These with the permanent asparagus are enjoyed until the middle of June when the next beans, peas, beets, pickles, lima beans, tomatoes, roasting ears, kohlrabi and such things come in quick succession. Of course, the fall brings a wealth of richness in the garden, but it also brings the last planting of snap beans, peas, lettuce, endive, onions and beets as well as the cultivation of the celery of which we are very fond. More time and energy are put on the corn, tomatoes and celery than anything else because we depend upon them more for canning and for winter use. This season we used the last celery in January and, of course, the canned things last until fresh ones come.

By having the smaller garden it does not become a drag, but is a real pleasure. Formerly we felt that we must have at least twice as many tomato plants as we needed in order to have plenty to give away to friends, but we have more to give away with the small patch than with the large one. Also we have more time to try new varieties. The vines are pruned just as trees are pruned, and while we do not use the stakes we thin so that they can have plenty of light and air. The same might be said of lima beans. We used to have poles and poles to care for, but now a smaller bed with better care yields more than in other years.

There is less trouble with weeds now than in the big patch. When the early peas, lettuce, radishes and such crops are done the ground is cleaned out and made ready for endive, later plantings of onions, the fall radishes,

from them as they fertilize and cultivate. With help so hard to get, and the farmers rushed to death, the proposition of a small garden with better and more vegetables should appear strongly, for the ladies and the children like to work in a wellkept truck patch when they abhor a big weed grown field. Cut the garden in half and see if you do not increase production without increasing work. We know, for we have tried it.

GARDEN NOTES.

PLANT seed for the late cabbage crop at once. See that the seedbed is fine and moist. Danish Ballhead is the most popular variety for winter storage. Drumhead Savoy is a high quality variety and is excellent for the home garden.

The first early plantings of garden peas are growing well now. Time to make another planting of the mid-season and late sweet wrinkle seeded sorts. Allow eighteen to twenty-four inches between the row for the dwarf varieties. The tall late varieties need at least three or four feet between rows. These should be provided with brush, wire netting, or something similar, for support.

Start the cultivator going early. It conserves moisture and means bigger and better crops.

Most people sow seed too thickly, consequently many crops require some thinning. When the plants of lettuce, radishes, onions, beets, carrots, etc., are about two inches high, they should be thinned until only the best remain, about two or three inches apart. Thinning allows the plants to develop larger roots, gives the sunlight a chance, and better plants result.

For slugs on roses there is nothing better than a thorough spraying or dusting with arsenate of lead.



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Opinions and Comment

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DO RABBITS INJURE TREES?

I SAW the article in the Michigan Farmer about rabbits injuring the trees. I wish to say that rabbits do injure trees around the woods quite a bit. On the north side of me there are five sections of woods, and on the south side five sections.

Four miles from where I live there is a young orchard in the woods. After the snow melted I went to that orchard. I did not find any trees ruined by rabbits, but that is no proof that they do not injure trees. Close by that orchard there is a twenty-acre swamp. The rabbits had all the poplar, birch and blackberry and raspberry brush that they could eat. Consequently they did not eat the apple trees.

I had one Bismark tree which stood four feet high, the trunk about two feet. The snow drifted around the tree and every limb was girdled.

A rabbit does not stand on his forefeet when he girdles a tree, but sits on his haunches. The reason rabbits girdle young saplings is that the trees get loaded with snow, which bends them down, and the rabbits can peel the saplings for eight feet. When the snow melts, the tree starts to grow in spring but dies later.—Isaac Kirkman.

THE RURAL MAIL BOX.

WHAT do the patrons who live on the left hand side of the route, as traveled by the carrier, think of the new ruling which requires all boxes to be placed at the right hand side? If they are doing as the writer is, they are, at considerable effort, suppressing a fine assortment of cuss words, while they wade across the road through several inches of mud and water. The roads here are not paved, the most of them are not even graveled.

The authorities at Washington seem very anxious lest the carrier should get hurt if he turns to the left side of the road to deliver mail. Do they imagine the traffic on the rural routes is as congested as it is on the main streets of our large cities? If the life of the carrier is endangered by turning to the left side of the road, how about the patrons who reside on the left side, and must walk across the road to take and get their mail? Are they to have no consideration? On the farms where there are children, they usually go for the mail. Is there any consideration for their safety in the new ruling?

The placing of the rural boxes all on the right side of the route makes no saving whatever, in fact it will be more expensive, for the carrier, for it will make a lot of extra wear on the seat of his pants, and it will also take more time to deliver the mail. With the box on the left side the carrier can put mail in the box without leaving his seat at the wheel of his car, while for a right-hand side box he must slide out from under the wheel, and get to his feet to reach the box, or else he must keep the seat clear of mail, and slide back and forth. He usually carries most of the undelivered mail on the seat beside him.

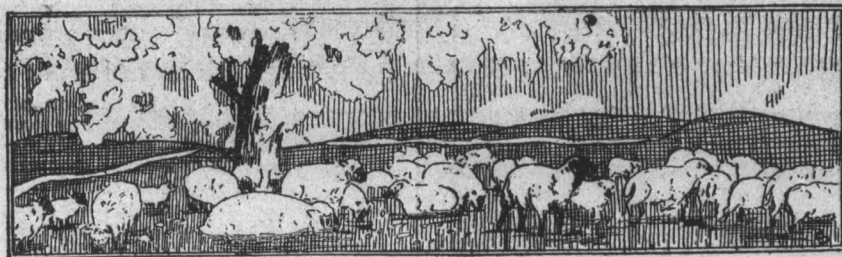
As for the carrier keeping to the right hand side of the road as he makes his rounds, any one familiar with country roads knows it is not done. Each person drives where the driving is best, be it right, left, or middle, and when two meet both turn to the right and pass. If the authorities at Washington want to make a real improvement on the rural routes, one that will be a real convenience to the patrons, let them require the carrier to display prominently on the

front of his car, in letters at least eight inches long, U. S. MAIL. Cars look pretty much alike, and at present there is nothing to distinguish the car with the mail till it turns up to a box. The carrier would not need to display the sign except when on his route. With such a sign prominently displayed the people would be more inclined to give the carrier the right-of-way. I commend the matter to the authorities at Washington.

If the carriers had any voice in the new ruling I will wager one hundred to one that they would vote down "all boxes on the right hand side of the route," and I know to a certainty that the farmers would.

Is the rural delivery for the benefit and convenience of the people in the country, or to carry out some fool idea that some one at Washington has thought up?

I hope the farm papers will take the matter up, and agitate it until the



farmers are allowed to put their mail boxes where they belong, on the same side of the road that the dwelling is.—Apollos Long.

REGARDING THE CONSOLIDATED SCHOOL.

IN one of your recent editions I noticed an article over the signature of C. H. Murray, relative to the Haslett Rural Agricultural School which, it seems to me, in fairness to the boys and girls of other communities, should not be allowed to pass without explanation. Hence I trust that you will be able to find space for this, at least partial explanation.

I infer from the views expressed by neighbor Murray, in the article above referred to, that he sees two main objections to the larger school district system, viz. financial and transportation.

None of us are really satisfied with the "lumber wagon" means of transportation which neighbor Murray refers to. Two springs of experience teach us that wagon transportation would be reduced to not more than two or three days each spring were it not for the few short stretches of road (one to six rods) that could be easily made passable but are allowed to remain year after year.

Neighbor Murray seems to insinuate that children should not be required to ride ten or twelve miles without blankets. "So say we all."

In the first place no child is required to ride ten miles in this district, and I think investigation would prove to Mr. Murray that at no time were the children without blankets, and even if the children really lost from school the few days necessary for wagon transportation, at the close of the school year, they would be much farther advanced than in the average one-room school.

Now a few words about the tax problem. No doubt neighbor Murray intended to be fair in his article but forgot to give the valuation of the farms cited. All who have even casually considered the tax problems realize that school taxes are assessed upon a per cent basis and I submit that is the proper foundation to build upon.

Now the school tax rate for 1921-22 in Haslett school district was \$9.44 per \$1,000 valuation, which included payment on bonded indebtedness and interest charges, which leaves our operating expenses less than \$6.00 per \$1,000 valuation, while in some of the rural school districts in neighbor Murray's township the tax rate, according to the report of the school board for 1920-21, was \$6.50 per \$1,000 valuation.

The tax rate for the villages and some of the city schools of Ingham

county vary from \$10.12 to \$23.01 per \$1,000 valuation. I understand that Sturgis claims the lowest tax rate of any city of its size in the state and according to a published report is \$12.45 per \$1,000 valuation.

The larger school district principle has nothing to fear I believe from fair truthful open criticism. It is the biased insinuating half-truth criticism that is apt to do the most harm.—B. W. Cade, Secretary Board of Education.

Notes from a Michigan Farm

By L. B. Reber

IT seems odd to speak of a wet rain but some rains actually are wetter than others, regardless of the amount of water falling. We are having a wet rain today; one of those drizzly, cold, soggy rains which makes you hug the fire, even if it is summer time.

It was just such a day, a number of years ago, up in Osceola county, that I had to go for the doctor. An old lady living near the parsonage had an

make life interesting. Our cultivated plants have to be coddled, fed pap with a silver spoon and you almost have to sit up with them nights, and even then they give up without a struggle when the weeds compete with them for moisture and fertility. Why doesn't some plant specialist immortalize his name by endowing our tame grains with the vitality of weeds.

Weeds are interesting things. I noticed up north that whenever we burned over a slashing fire weeds grew up thickly although there had never been a fire weed there before. The wild blackberries and raspberries never were sprayed, trimmed or cultivated, yet they never froze or died out as our tame ones do, and they bore an abundance of finely flavored fruit. It was a queer thing that the cut-over pine lands always grew up in scrub oak and poplar instead of a new growth of pine. All the corn borers, Mexican bean beetles, bole weevils, San Jose scales and melon bugs in the world could not phase our wild plants or the weeds but just let one of them get on to a cultivated plant and it immediately succumbs without a struggle.

Well, by gravy! This sounds like the wailing of a confirmed pessimist; must be the effects of this wet rain. I better put on a new record. This rain is just what the doctor ordered. Our ground was hard as rocks and we had to stop plowing. Now we can make the plow slip along the furrow with ease and watch the warm, brown earth roll over. We never had better prospects for a big fruit crop. Young trees have made almost as much growth as they made all last summer. Take it all around, you can't beat old Michigan; we may growl at her moods and tenses, but she never fails us, here's to her.—L. B. R.

FRUIT NOTES.

A VERY light Baldwin and Northern Spy apple crop is in prospect in Western Michigan's fruit belt but the outlook for practically all other fruits, with the possible exception of raspberries, is very encouraging. The Baldwin and Spy trees were conspicuous by their shyness of bloom this spring. They were all the more conspicuous as this was supposed to be their heavy bearing year, the last large crop being harvested two years ago.

There are many Baldwin orchards in the state and James Nicol, of South Haven, has always said that they have paid off more mortgages than all other apple varieties grown. But this season they will not qualify in the mortgage-lifting class. They are not bearing because of lack of fertilization, as most of the commercial growers thoroughly nourished their trees in accordance with the best known practices.

Despite the fact that last winter was not severe and the temperatures at no time fell to any low marks, raspberry canes have been seriously injured, possibly from disease and a small crop of this fruit is in prospect. Strawberries promise a bumper production and first pickings in Berrien county probably will be in the market by the time this item reaches its readers.—R.

Francisco Farm Notes

By P. P. Pope

NEXT in importance to the divine profusion of water, light and air, those three physical facts which render existence possible may be reckoned the universal beneficence of grass. It bears no blazonry of bloom to charm the senses with fragrance or splendor, but its homely hue is more enchanting than the lily or the rose. It yields no fruit in earth or air, yet should its harvests fail for a single year famine would depopulate the world."

The above lines are taken from John James Ingall's beautiful ode to grass.



Grass is such a common thing in this rich, well watered land of ours that we take it for granted, not giving it credit for many good things or stopping to think just how much we are dependent upon it. We turn it with the plow and till the soil until not one green spear shows. We continue cultivation until the humus is depleted and the soil becomes lifeless, and the rains wash the top soil away and gully the hillsides. Grass bides its time to return and restore the destruction we have wrought. The grass fields do not wash, they become richer rather than poorer with the lapse of time. They attach us to the land. Our affections are not deeply set on a plowed field or a corn crib. It is the pasture with its inhabitants, the frolicking lambs, the pigs in clover, the sturdy colts, with their big gentle mothers, and the rugged bright-eyed calves, that touch the heart and make us happy to be a part of the great wide country.

In the past we have not esteemed pastures as we should. They feed mankind. Each evening sees the cows come home from their work of transforming nature's carpet of green into the richest of food for man—foaming milk, rich cream and yellow butter—the most perfect food, the most wholesome food for all the young. Their flesh is grass. The steers graze the rich pastures till they are filled, then they lie down in a herd on the hillside contentedly chewing their cuds for an hour or two and making grass into juicy steaks, the food that has enabled those who ate thereof to dominate the world.

The races of men who wear wool have always been the leaders of civilization. Wherever the golden hoof has trod there has come prosperity. The white fleeced sheep eagerly nip the tender grass and are the medium through which pastures clothe mankind.

There is something that comes from living amid broad pastures and caring for good live stock that makes great souls in men; that gives them faith; that makes them sane, patient, enduring, clear thinking; that imbues them with a deep love for their land and for their country.

But to get down to "brass tacks," the man who has been raised in modern America will ask, "Does it pay him in dollars and cents? Where is the profit?" Who can tell? How many of you can tell how much money your pasture fields were worth to you last year? Most of us have been inclined to regard them from the standpoint of convenience rather than profit so we move the fence in and add another slice of the sod to the plow land. The

lands used for pasture are largely those upon which little or no labor has been expended. All the labor, all the manure, all the lime, all the drainage, all the fertilizers go to the plow land. Little expense is put onto the grass except to fence it, so what it returns is most all profit. When we credit it with the gallons of milk produced, the rolls of butter, the pounds of wool, the growth on the young pigs, lambs, calves and colts, and the healthful maintenance of the aged stock, it will not be surprising if we find the net profits from the grass acres greater than from any of the acres in plow land.

Of course, it would not be practicable nor possible to find the exact profit, resulting from these various sources during any one year from the pasture lots, but drawing upon personal experience as we are often required to do when looking for facts, we are able to give from old records with young growing steers these figures. (1) Two cars of native steers grazed the season through on sixty acres of improved land pasture made a net return of \$8.60 per acre. This was on land valued at \$50 per acre, and at a time when cattle were worth but half their present value. (2) The following year this same pasture made an average daily gain on forty steers of two and one-quarter pounds from May into September. (3) One car of steers grazed on wild cut-over land gained 250 pounds each in 160 days. They were allowed approximately five acres each of land that we had purchased at less than \$10 per acre. (4) One car of steers, let out to another party to be grazed and cared for by the head returned just \$3.00 for each one that they cost.

Let us not despise grass. It is more to be prized than work, yea, than much hard work.

WHAT SHOOTERS SHOULD KNOW.

SHOOTERS write every few days asking if a three and a half dram load of powder is all right for a six and a quarter pound gun.

It might be safe in the gun but it would "kick your head off" and you would be lucky if the recoil didn't break the stock.

There seems to be a tendency to use ten-gage loads in a twelve-gage, twelve-gage loads in a sixteen-gage, and sixteen-gage in a twenty-gage in order to increase the killing power of shotguns.

These heavy loads really defeat their own ends. The shot is mutilated more, the patterns are poor, and due to the increased resistance of the deformed shot the velocity drops off more rapidly.

Authorities agree that three and three-quarter drams of powder, and one and one-eighth ounces of shot in the twelve-gage, two and a half drams of powder and three-quarter ounces of shot in the twenty-gage are properly balanced loads and no advantage is to be gained in using heavier ones.

One should not expect a twenty-gage gun to carry a twelve-gage load any more than you would think of having a pony draw the load of a cart horse.

Manistee county is to try its hand at raising sugar beets. The Holland-St. Louis Sugar Company has contracted an acreage at \$5.50 a ton. Beets grown there are said to be higher in sugar content than in some of the southern Michigan counties.

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Baumann's Dahlia Gardens,
BIRMINGHAM, MICH.

Mention The Michigan Farmer When Writing Advertisers

Trained American Fox Hounds, Rabbit and Skunk dogs all ages. Send stamp.
W. E. LECKY, Holmesville, Ohio

**1/3 more land
cleared
per dollar**

—with DUMORITE
save still more
money by using the
latest, cheapest
blasting methods.

2

Preparing and Loading the Charge



1 Driving the hole

CUT FUSE of a length sufficient to project six inches from top of hole. Be sure cut is made squarely across fuse, not diagonally. Remove one blasting cap from box with the fingers. (Do not use a wire, stick or any other hard implement.) Next, slip cap on end of fuse, and crimp securely with cap crimper. (Clover Brand recommended.)

Punch a hole diagonally in side of cartridge with pointed handle of cap crimper, and insert cap with fuse attached. To keep cap from slipping out, tie a string around fuse and then around cartridge.

If the charge is to consist only of the primed cartridge, place it directly in the bottom of the hole made beneath the stump. For a larger charge, slit the other cartridges—unless the ground is wet—press them down into the bottom of the hole, and load the primed cartridge last. Cap should point toward bottom of bore hole.

The subsequent steps in stump blasting will be described in future issues of this paper.

Dumorite, the new Du Pont Farm Dynamite, is the cheapest explosive for stumping. You can buy 135 to 140 sticks for the same price as 100 sticks of 40% dynamite—one-third more at no extra cost. Dumorite has the heaving action of "20%" and the strength of "40%," stick for stick. Order Dumorite from your local dealer and write us for free copy of 104-page "Farmers' Handbook of Explosives," which gives full instructions for the use of dynamite in land clearing, ditching and tree planting.

E. I. DU PONT DE NEMOURS & CO., Inc.

McCormick Building
Chicago, Ill.

Hartley Building
Duluth, Minn.

NON-HEADACHE

DU PONT

NON-FREEZING

DUMORITE

MYERS "SELF-OILING" WATER SYSTEMS

MYERS Electric House Pump gives you running water anywhere in your home or on your farm. Easy to install, self-starting, self-stopping, self-oiled. In health, happiness, labor and money saved, no equipment pays bigger returns. Dealers everywhere carry a complete line of Myers Pumps, Hay Tools and Door Hangers. See your dealer or write us for catalog.

THE F. E. MYERS &
BRO. CO.
345 Church St., Ashland, O.

Reid's MILK COOLER

Milk not cooled over a Reid Cooler is likely not properly cooled. Get a Reid and save sour milk losses. By far the best cooler; most easily cleaned. We have added heavy pressure coolers to our line. Write for prices or ask your dealer.

A. H. Reid Creamery
and Dairy Supply Co.
6900 Haverford Ave.
Box C Philadelphia, Pa.

WALL PAPER

1,000,000 ROLLS
Per Roll Why use Paint when 82c
will paper Room 12 x 14, 9 ft. high
Martin Rosenberger, Cincinnati, Ohio

SURE QUICK DEATH FOR RATS AND MICE

Remarkable Triple Strength Virus
Kills Every One—Not a Poison

You can now easily and quickly kill all rats, mice and gophers with Triple Strength Virus—the most powerful concentrated virus known—the sure, safe way to destroy rodents. Positively not a poison. Harmless to humans, pets, poultry, stock, etc.—affects only rodents.



Rats Die Outside

Rats flee because they become infected with a plague that affects the heart, blood vessels and lungs, destroying the blood corpuscles and causing suffocation. Rats rush outside to get fresh air and water. When the diseased rats get outside, they never get back for the disease is then so far gone it kills them. No odor, no dead rats to handle, no live rats to kill.

Special Introductory Offer

To introduce this powerful Triple Strength Rat Virus, we will make every reader of this paper—for short time only—a special offer of a regular \$2.50 bottle for only \$1 postpaid. This \$2.50 bottle Triple Strength Rat Virus is enough to clear a big poultry house, home, barn or yard of rats and mice. Send order today, sure. Give it according to directions—if after 30 days' trial you find any rats or mice—we will refund your money without question.

If not convenient to send money today—just send your name and address, a postal will do—pay postman on arrival. Remember, it costs you nothing if it does not do all we claim.

Agents Wanted in every community

GOLD SEAL LABORATORIES

839 Roosevelt Road, Dept 262, Chicago, Ill.

AGENTS, every county, represent manufacturer oils, greases, varnishes, paints, roofing cements. All or spare time. We deliver and collect. Big commissions paid weekly. Details free. Merit Oil & Paint Co., 610 East 9th St., Cleveland, Ohio.

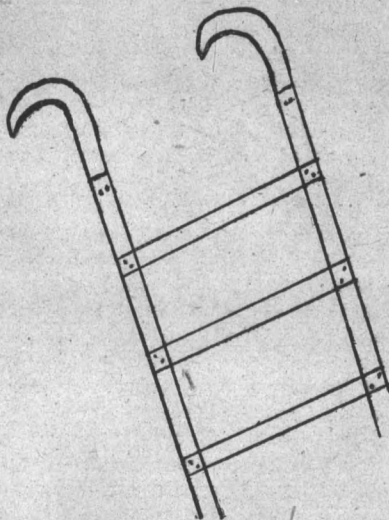


A HANDY FARM LADDER.

THIS ladder will hook over a tree limb when pruning or picking fruit or will hook over the ridge of a building in case of fire or when repairing the roof.

Use two-by-four-inch strips for long pieces and they should be long enough to reach the highest place that you will need it for. I prefer sixteen feet for general purposes. Pieces three inches wide and one inch thick will do for cross pieces. Nail them securely so there will be no danger of a fall.

If you have a home blacksmith shop take two strips of iron about fourteen inches long and put two holes in one end of each for screws. Bend the other



end into an arch and attach them to the ends of the ladder.

Have fairly sharp points on the arches so it will hold the ladder firmly in place on roofs and make the arch broad enough so it will fit over large limbs. It will prevent many a fall, as most limbs will stand considerable weight when the ladder is only leaning against it.—J. L. F.

AN INFIRM ALFALFA SEED-BED.

FARMERS are coming to realize more and more the importance of a firm seed-bed for successful alfalfa growing. The upward movement of moisture requires a well-compacted soil, with particles pressed closely together, in order to lift it to the surface and bring about vigorous germination and growth.

This was never more clearly demonstrated than on the Harry Stevens farm south of Gaylord. Alfalfa was seeded last season on this place on a sandy soil which evidently had not been very thoroughly firmed. The field was just being plowed when the writer visited it May 10. Absolutely the only place where the alfalfa had been able to germinate and grow was where the wheels of the drill had left their compact trail. There were the rows of alfalfa, fine and vigorous, following those wheel marks, with occasionally a plant where a horse had stepped, but that was all. It was a most striking illustration of the fact that the roller or the cultipacker are most necessary in fitting a seed-bed for this crop.—H. C. Rather.

BEAN CULTIVATION.

MANY duties made it impossible to publish in season the information we intended to give on the selection of bean varieties, the planting of the crop, etc. This information was given, however, in Professor Cox's article which was run last week. We are sure that those of our readers who grow beans found much valuable in-

formation on varieties and the best practices in planting from Professor Cox's article.

Despite the fact that spring work had been delayed, farmers are now rapidly catching up on their work, and observations in several of the important bean counties would indicate that a large percentage of the acreage is being planted in good season. The majority of the fields, too, have been well fitted which promises to give the crop a fine start.

Right after planting it is a fine practice to use the spike-tooth harrow on the bean ground. If one can go over the field a couple of times before the young plants are coming through, he will find that his after cultivation will be less exacting.

The first time through with the cultivator, the implement should be adjusted so that the teeth will cut to a fairly good depth in the middle of the row. The shovels near the rows should be adjusted to run near the beans and yet not cover them. Be sure that the leaves of the plant are thoroughly dry when you are cultivating. Dirt clings to the wet leaves and starts trouble with diseases.—B. W.

EXPERIENCE WITH SOY-BEANS.

THE soy-bean will in time fill a very useful place in our farming, whether it be used as a soiling crop, or for feed. As a feed it is rich in protein and will go a long way in balancing rations where clover is not available. On soils that are slightly acid soy-beans can be grown much better than other legume crops.

Although this crop may be grown without inoculation, it is advisable to make certain that the roots are supplied with nodules for producing nitrates. I have found the pure culture method easier and apparently as efficient as inoculating with soil from soy-bean fields.

When planting for silage, the beans may be mixed with corn and planted together or put in by the use of extra seed boxes furnished by some planter manufacturers. The quantity of seed used will, of course, depend on how thickly one desires to plant. It usually requires from four to ten quarts per acre.

For hay I get best results when the seeds are put in drills twenty-four inches apart. I cultivate the rows once or twice during the season. The seeding can be done with a grain drill by stopping up a part of the feeds, or a corn planter may be used by widening it out and then straddle one wheel mark on the return trip. Seeded in this manner will require from one-half to a bushel of seed per acre.

In harvesting for hay, I cut the beans when in bloom or by the time the first pods form. At this stage of growth they retain the foliage much better and the stems are soft and make a superior quality of hay. The best method I have found for harvesting is in cutting with a self-reaper. I have, however, mowed and raked the crop up before the leaves were dry enough to haul off. Being broad these leaves hold sand quite badly when harvested with a mower. Ito San is a leading variety for all purposes.—W. W. Schworm.

A. C. Baltzer, of the M. A. C. dairy extension department, and County Agent R. W. Tenney, have formed a new cow-testing association in Eaton county with twenty-five farmer members with herds aggregating 260 cows. It is one of the dividends paid by the recent alfalfa campaign in that county.

And Now, Profit in Farming Without the Drudgery

A century ago our grandfathers replaced oxen with horses. Today, a far greater change is taking place. Mechanical power now supersedes the horse!

THE power-farmer of today presents a striking figure, a living symbol of the new agricultural era—the era of Fordson Farming. Now, with mechanical power he accomplishes in *days* what formerly required weeks—sometimes months of labor. His crops are bigger, his profits greater, his time for pleasure doubled. And, what is perhaps the greatest reward, the toil, the slavery, the drudgery of old-fashioned farming is rapidly passing.

This remarkable advance in farming methods is made possible by the perfect combination of the Fordson and the Standard Equipment specially designed to be used with it.

In developing this line of Standard Equipment, the manufacturers have provided economy of first cost and economy of operation that is such an outstanding feature in Fordson Farming.

During the time the Fordson was being perfected, the Oliver No. 7 Plow was undergoing its exacting tests. So,

when the Fordson tractor was completed the Oliver No. 7 became its plowing partner.

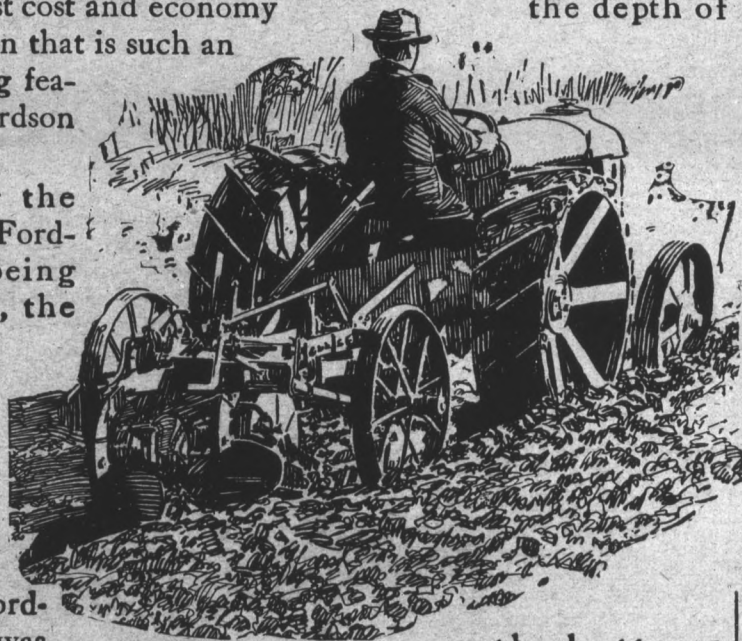
The plow is so constructed that the center line of draft is

in perfect alignment with the center line of draft on the tractor. This scientific alignment avoids side draft, and the plow turns a clean furrow. Nor is there any loss of power.

The Oliver No. 7 is so light running that there is no stress on the tractor. No effort is required by the operator to do the most thorough plowing.

Every unnecessary part has been eliminated. Strength that means long life is built in every detail. Steel parts are heat treated and castings are of tested strength.

To adjust the depth of plowing is merely a matter of working a lever to operate a jack. This jack arrangement—which is an exclusive Oliver feature—gives such a purchase on the lift that it is extremely easy to change the depth of



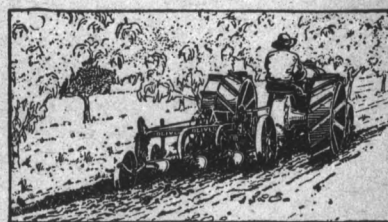
Oliver No. 7—the plowing partner of the Fordson

the bottoms without stopping or without even slowing down.

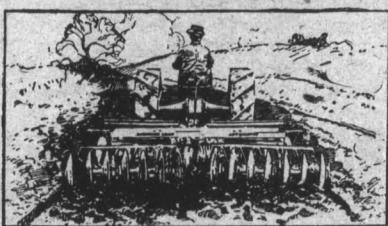
The power lift is tripped by simply touching a lever that is



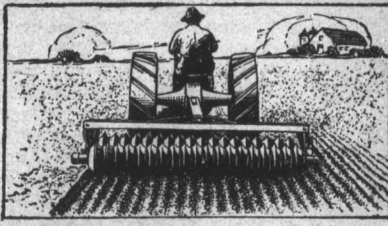
Oliver Single Bottom Sulky
For deep mouldboard plowing in trashy conditions with the Fordson. Similar in construction to world famous No. 7 gang.



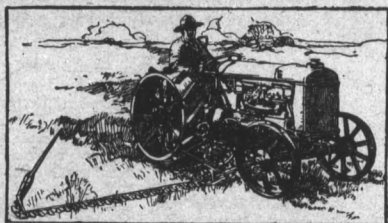
Special Oliver Orchard Plow
Fordson orchard plowing is done thoroughly with the Oliver special orchard gang. Branches and trunks are not injured.



Roderick Lean Automatic Harrow
Fitting the seed bed the Fordson way with the Roderick Lean Automatic Tractor Disc—a special Fordson Harrow.



Good Work With Roller Pulverizer
Final Fitting of the seed bed with Fordson power and the roller pulverizer has meant more bushels for many farmers.



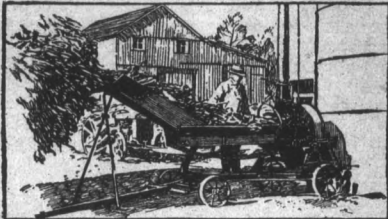
Roderick Lean "Cutmore" Mower
Attaches without changes to the Fordson. Power taken direct from driveworm. Makes a one-man outfit with Fordson.



The Amsco Tractor Drill
Tractors speed and accuracy utilized by the Fordson owner with the Amsco special drill. Force feed makes positive planting.



The Amsco Two-Row Cultivator
Cultivating corn is easy for the Fordson farmer with the Amsco Cultivator—special for the Fordson. Made for hard work.



Money-Maker Ensilage Cutter
Fordson silo filling with the Money-Maker done quickly and cheaply. Strength and scientific design give perfect work.



The Money-Maker Hay Press
Baling hay with the Fordson and Money Maker baler is an important operation to the farmer with large hay acreage.



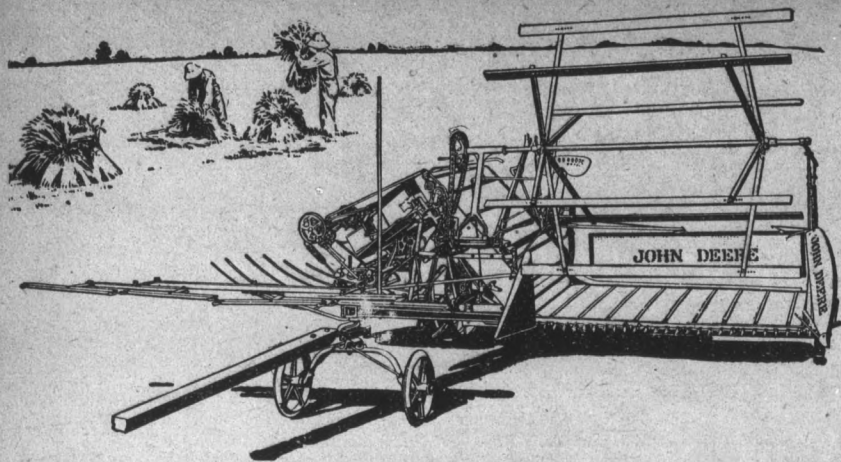
Wood Bros. Individual Thresher
The Wood Individual Humming Bird Thresher and Fordson make short work of threshing. All grain is saved.

so conveniently placed that the operator need not turn his head.

Sixty-five years of plow building experience is one good reason why the No. 7 is built so well that it has been known

from the beginning as Standard Plow Equipment with the Fordson. The long, profitable service built into the plow as a result of that experience is your assurance of plowing satisfaction the Fordson way.

Ford Dealers Everywhere Sell Standard Fordson Equipment



Harvest Time Protection

Its great strength and its improved construction, combined with unusually careful workmanship, rigid inspection and testing of all working parts in the factory, make the John Deere a mighty dependable binder—a machine that gives you maximum crop protection during harvest.

Farm implements are your cheapest investment. The University of Missouri found the implement cost of producing a crop of corn last year to be only one-ninth the total production cost per acre. Based on this year's prices, the cost will be only one-thirteenth.

The John Deere Binder's main frame and platform are built extra strong to withstand usage under the most difficult field conditions. Its main bearings are self-aligning—this prevents binding, heavy draft and breakage.

Its binder attachment has special features. For example, the wearing parts of the knotters have hardened surfaces to insure long life and better tying qualities. Its three packers instead of two make better bundles in down and tangled grain.

Its bundle carrier, unusually easy to operate, is provided with simple adjustments by which its ease of operation can be maintained for years.

Its all-steel quick-turn tongue truck relieves the horses of side draft. The flexible mounting of the truck axle permits both wheels to hold to uneven ground to keep the binder running straight.

The operation of the John Deere Binder can be instantly controlled from the seat—all adjusting levers are easy to reach and easy to operate.

Because the John Deere gives extra years of satisfactory service, harvesting costs per acre are unusually low. Be sure to see this better binder at your John Deere dealer's.

Big Harvester catalog free. Drop a post card to John Deere, Moline, Illinois, asking for booklet BR722.

JOHN DEERE

THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

Club Prices Slashed

OFFER No. 509.

MICHIGAN FARMER, one year...\$1.00
People's Popular Monthly, one yr. .35
Gentlewoman, one year20
Good Stories, one year..... .25

Total value\$1.80
All for \$1.45.

OFFER No. 501.

MICHIGAN FARMER, one year...\$1.00
McCall's Magazine, one year.... 1.00
Household25
Total value\$2.25
All for \$1.65.

OFFER No. 525.

MICHIGAN FARMER, one year...\$1.00
Capper's Weekly, one year..... 1.00
Household Magazine, one year... .25

Total value\$2.75
All for \$1.65.

OFFER No. 528.

MICHIGAN FARMER, one year.
Capper's Weekly, one year.
Household, one year.
Poultry Keeper, one year.
Total value\$2.75
ALL FOUR ONLY \$1.90.

OFFER No. 553.

MICHIGAN FARMER, one year.
Fruit Belt, one year.
Capper's Weekly, one year.
American Woman, one year.
Total value\$3.00
ALL FOUR ONLY \$2.00.

Use This Coupon for Your Order.

THE MICHIGAN FARMER,
Detroit, Michigan.

Gentlemen:—Enclosed find \$.....
for which send me Michigan Farmer
and publications in Club Offer No.....
each for one year.

Name
Post Office
R. F. D..... State.....

Wipe Out Every Rat and Mouse

Amazing New Discovery Quickly Kills Them All. Not a Poison

Rats, Mice, Gophers—in fact all Rodents can now be wiped out easily and quickly. Imperial Virus will do it. This new discovery is a fluid, true Virus. Entirely harmless to humans, poultry, stock, pets, etc.



Infects Rodents only. Greedily eaten on bait. Sets up burning fever. The pests communicate it to others, and all die outside, hunting air and water. Imperial Virus is put up in sealed bottles, thus insuring full strength and potency. Only safe, sanitary method to overcome these pests. Protect your Poultry, especially Baby Chicks and Egg Hatches.

YOU CAN GET YOURS FREE

Here's how! Send \$1.00 today (currency, M. O. Check, etc.) and we will ship you by return mail, postpaid, two regular, full sized (double strength) \$1.00 bottles of Imperial Virus. Use one to rid your place of these pests, and sell the other to a neighbor, thus getting yours free. Special inducements to represent us.

If more convenient, send no money, just your name and address. Pay postman \$1.00 and few cents postage when two bottles arrive. Guaranteed to do the work to your entire satisfaction within 30 days, or your \$1.00 will be cheerfully refunded.

Imperial Laboratories
(Dept. 850)

2110 Grand Ave., Kansas City, Mo.



Wanted Position Having sold our large farms, we desire to place our superintendent. He made good in every way. Is 35 years of age, widower, no children. Is man of finest character, well educated, a real man 6 ft., 200 lbs. and a hustler. Address him, Herman R. Franzen, Ephrata, Pa.

News From Cloverland

By L. A. Chase

LOANS TO FARMERS.

AT a special meeting called at the instance of the county agricultural agent and the agricultural committee of the county board of supervisors, the Ontonagon county board of supervisors has authorized a loan of fifty dollars to any Ontonagon county farmer making application therefore, to assist in the purchase of seed for spring planting. The aggregate of these loans is not to exceed \$2,500. The operation will be conducted by the banks of the county cooperating with the seed dealers. The Herald, of Ontonagon, explains this action of the county as due to the poor crops in some sections last year, the lack of outside work during the winter, and the unusual severity of the winter itself. These loans become due six months after date, and are rather iron-clad in character, seizure of crops being agreed upon in lieu of repayment at date.

INTERESTING LAND CLEARING WORK.

THREE land-clearing schools were held in Iron county the second week of May and were largely attended. From thence the train passed over into Dickinson county. In these schools farmers do not look on: they actually do the work under expert direction. Although many of them have been used to land-clearing in their own way they are free to concede that there are many new tricks to be learned in this way. Farmers who have once been miners sometimes think they know all there is to be known about the use of dynamite, but when one of these saw a large stump moved neatly with fourteen sticks, when he was positive it would require thirty, he admitted that there were a few wrinkles in the game he had not acquired.

Much interest was manifested in several home-made devices for helping rid the land of stumps. "Paul Bunyan's hammer" and the "scissors stone-boat" saved much backache, and, as one farmer expressed it, a deal of "cuss in," while the "frost trip" made another farmer feel like "cussin'" when he thought how much trouble he had been put to in all these years, releasing the chain from the stump on the stump-pile, when this simple device, that any blacksmith can make, would have saved him much of his trouble and labor. On one farm a simultaneous discharge of nitroglycerine specially prepared for the purpose, instantaneously made a ditch five feet wide, three and a half feet deep and five rods long, on swampy ground, encumbered with roots and submerged logs. From such reports as are at hand, it seems our farmers are learning many new tricks in land-clearing that will stand them in good stead in the coming years. They are also learning that they can send in to Marquette to the office of L. F. Livingston, who is directing these schools, and get advice and drawings for the construction of home-made devices that cost almost nothing and save much time, expense and labor.

LAND-CLEARING SCHOOLS IN JUNE.

THE schedule of land-clearing schools to be held in the upper peninsula, this season, lists the following schools during June: Newberry, Friday, June 2; Bakefield, June 3; Shingleton, June 6; Negaunee, June 7; Humboldt, June 10; L'Anse, June 12; Baraga, June 13; Chassell, June 14;

Oskar, June 15; Lake Linden, June 16; Toivola, June 19; Alston, June 22; Covington, June 24; Wakefield, June 26; Bessemer, June 27; Ironwood, June 27. This ends the tour.

A SHEEP ENTERPRISE.

THE Menominee Herald-Leader of May 12 recounts the experiences of G. R. Weaver, of Iron River, in the sheep business. His first experiences were not entirely happy. He had purchased a herd of 1,632 head of sheep, but the first winter, both as to severity and price of feed and mutton, was a hard one. While there is ample feed during the summer and fall, Mr. Weaver saw that it was absolutely necessary to provide ample winter feed also and permanent quarters for his sheep. He must grow his own feed as far as possible. It was necessary to get cut-over land from a large land-owner that would give easy terms while the business was getting established. This was done. A lambing-shed was erected and, during the winter, some five hundred lambs were successfully added to the flock. It is believed that Crescent Cut Ranch is destined to be a successful enterprise in this district.

MINES AND TAXES.

IN some assessing districts of the upper peninsula as high as ninety-eight per cent of the taxes are paid by the mining companies, according to Mr. L. P. Barrett, assistant state geologist, and mine appraiser for the state tax commission, addressing the Marquette Rotary Club on May 15. In mining districts the average ratio of mine taxes to other taxes will run about seventy-five per cent, Mr. Barrett said. The problem of arriving at iron mine valuations is more difficult than in the case of farm property, because there are very few transfers of mine real estate to guide the assessors in arriving at valuation.

In arriving at the valuation of iron mines, Mr. Barrett explained, there are taken into consideration the quantity of ore belonging to the mine, the average profit that has accrued and is likely to accrue from the sale of this ore, the probable duration of the mine, and the present worth of the mine calculated at six per cent interest, with an allowance of another six per cent for depreciation. This method yields results that are unquestionably close to the true cash value of the mine. During the past ten years the profit as ascertained by the state tax commission has been about four per cent, or, taking the royalty paid to the owners of the feed, about seven per cent.

Taxes ordinarily average about thirty cents per ton of ore shipped, but last year they were eighty-six cents, or about one-third of the selling price of the ore. There seems, therefore, no question that the iron mines are taxed, like farm property, to the limit. Much of this increased tax goes for local purposes, there having been a four hundred per cent increase in the tax burden since 1914.

FEDERAL AID ROADS IN MICHIGAN.

SINCE the year 1916 there has been completed in Michigan 241.7 miles of federal aid road. At the present time there is under the course of construction, or funds allowed for the building of 455.4 miles. This gives a total mileage for the state of this type of road of 697.1 miles. There remains available for new projects the sum of \$773,854.

Radio Department

Conducted by Stewart Seely

TYPES OF RECEIVING SETS.

IN order to know what type of apparatus is best suited to his individual case one must know the approximate range, cost and general dependability of the different types of receiving sets that will pick up the radiophone broadcasting stations.

A receiving set consists of two main parts, the tuner and the detector. In general, receiving sets may be classified according to the type of detector employed. A crystal set is the very simplest form and may be built at home if one desires to do so. The vacuum tube receiving set is the one most commonly used, however, on account of its much greater sensitivity and consequently greater range. These are the only types that are used to any extent today.

Frequently we see radio apparatus advertised to have a certain definite range, but such statements are misleading and the range is usually overestimated for ordinary work. However, it is safe to say that an efficient crystal detector set will serve adequately to receive the concerts and programs from broadcasting stations located within thirty or forty miles and a vacuum tube set from stations three or four hundred miles distant. These ranges are only approximate and under favorable conditions that may be greatly exceeded.

The cost of the apparatus depends, of course, very largely upon the range of the set. With a crystal detector no batteries are necessary and since these, together with the vacuum tubes, are the most expensive parts of the ordinary equipment, the cost of a crystal receiving set is much less than sets which employ the vacuum bulb or audion. It is possible to purchase this type of receiver for about twenty dollars and the results are often surprising. Under very favorable conditions these sets have been known to pick up broadcasting stations two and three hundred miles distant, although as stated before, they cannot be depended upon to work regularly more than forty miles.

There are many makes and types of vacuum tubes being sold today. A vacuum tube requires two separate batteries in its operation. One is usually a six-volt storage battery and the other an eighteen to forty-volt dry battery. These are seldom included in the price of the set and must be purchased separately. The storage battery costs about \$17 and the dry battery two or three dollars. The vacuum tube may be purchased for from five to eight dollars. These items usually bring the cost of the complete outfit to about \$75 or \$80. This type of receiving set can be depended upon to have a range of three or four hundred miles.

Next week we will take up a detailed discussion of the simplest form of crystal detector receiving set, one that may be built at home.

QUESTIONS AND ANSWERS.

Why do the vacuum tubes used for amplifiers cost more than the detector tubes?

A much higher vacuum is necessary in the amplifiers.

How expensive are the head 'phones for a receiving set?

They may be purchased for seven or eight dollars.

What instruments are necessary if one is located within a few miles of a broadcasting station?

Double slide tuning coil, crystal detector, 'phone condenser and 'phones.

The first real wireless signals were transmitted by Marconi in 1884.

Do You Want Duty-Free POTASH?

Recently a United States Senator, who is actively engaged in trying to defeat the "joker" in the Free List which puts a 100 per cent duty on agricultural Potash, asked why the farmers were not represented at the hearings before the Senate Finance Committee when the subject was under consideration. A man, who attended these hearings, called the Senator's attention to the fact that three owners of farms had appeared, representing New Jersey, Missouri and Indiana; that the New Jersey Federation of County Boards of Agriculture, and the Representative of the New Jersey State Grange appeared; that the Representative of the National Grange made a statement; that the National Farm Bureau Federation and the Representative of the National Bureau of Farm Organizations had been actively working for free Potash, and that the Washington Representatives of these Agricultural Organizations represented millions of real farmers, who paid good money to belong to these organizations and to support their representation in Washington, upon whom they depended to look after legislation affecting farmers' interests.

Later on it developed that other Senators had this same thought—that the farmers were not asking that Potash remain on the Free List. There can be no question that all farmers most strongly object to paying two dollars for a dollar's worth of Potash.

Ten people, representing farmers, fertilizer manufacturers, producers of imported potash, and former producers of American potash, appeared before the Senate Finance Committee, or filed briefs on the subject.

Of these, nine asked that Potash remain on the Free List and one asked for the duty.

Why then have the Senators come to believe that farmers are indifferent about the matter?

The explanation is to be found in the fact that

the "United States Potash Producers' Association" maintains in Washington an organization which is very active in urging a duty on the farmers' Potash. At the hearing their propagandist shouted: "Where was the American farmer yesterday? Where was the farmer of the South, who uses more Potash than any other farmer in the country? . . . Where was the American Farm Bureau Federation, which has its offices in Washington? Where was the National Bureau of Farm Organizations, representing thousands of farmers?"

This was clear bluff, for these organizations were represented and they have taken their stand squarely for Free Potash.

But the bluff, constantly repeated, seems to have made an impression that will be costly to the consumers of Potash, unless immediate steps are taken to show the Senators that farmers are very much in earnest about the matter. The farmers' representatives in Washington must be supported by the farmers at home.

The only effective way to do this is for farmers to write to both of their United States Senators at Washington, urging them to see that the "joker" at the end of Paragraph 1635 be struck out and that Potash used in fertilizers remain on the Free List, where it always has been.

The Senate is now considering the Tariff Bill. Write your Senators today.

During the time when foreign Potash could not be obtained, Potash sold at more than ten times the prewar or the present prices. Then the American producers, some of whom are called the "Borax Brigade", had the opportunity of profiteering to the limit, and of selling at very high prices Potash of an inferior, and sometimes injurious kind.

Now they ask for "protection" in the form of one of the most excessive duties in the whole Tariff Act. Unless the farmers act promptly, they are likely to get it.

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Remember, only salt that dissolves completely, instantly, is good salt. Best for every farm purpose—cooking, baking, butter making, meat curing and table use.



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This International Speed Truck, which is putting new life into the implement industry, is the ideal truck for any farmer and business man who wants fast, dependable haulage at low cost. Ask the McCormick-Deering dealer about the "Red

Baby's" brothers. For \$1500, f.o.b. factory, you can get an International Speed Truck complete with any one of twelve different body and cab combinations, and with tires, power tire pump, electric lights and starter, fenders, etc. Liberal terms if you haven't the ready cash.

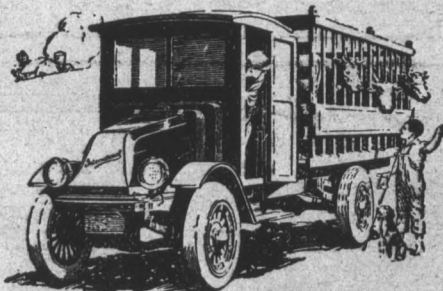
Flag the McCormick-Deering dealer as his swift "Red Baby" comes along, or go to his store to pick out the truck and body style you need for your work. The closer you investigate this speed truck, the better you will like it. If your hauling is on a larger scale, remember that the International Motor Truck line is made in eleven sizes from the 1500-lb. speed truck to the 10,000-lb. heavy-duty unit. Write for catalog.

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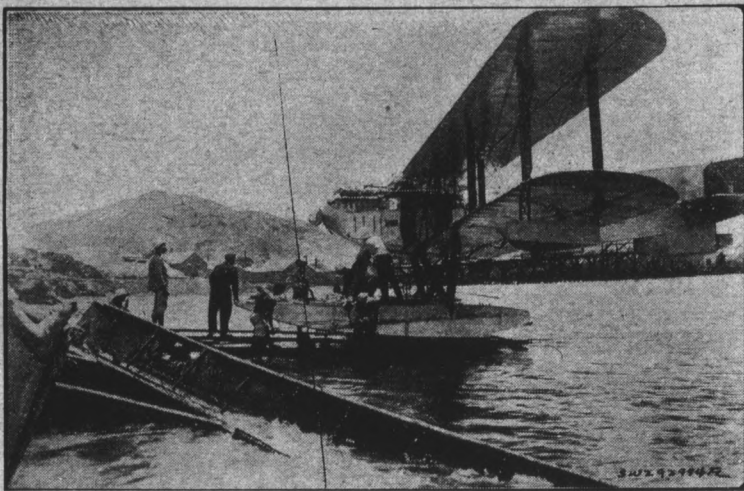
Speed Truck, Grain Box Body and Enclosed Cab

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WORLD EVENTS IN PICTURES



Princess Juliana, of Holland, who recently celebrated her thirteenth birthday.



This is the Portuguese hydroplane which attempted to fly from Lisbon, Portugal, to Dio de Jeneiro, Brazil, a trip of 4,260 miles. The plane was wrecked at St. Paul's Rock, near the Equator, 1,600 miles from its destination.



Lady Astor jokes with her former Virginia negro servant, whom she had not seen in years.



These Nashville, Tenn., high school girls defeat their boy school-mates, members of Reserve Officers' Training Camp, in a rifle contest.



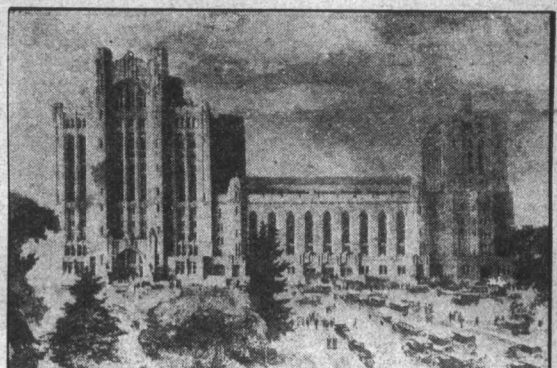
William McKettrick and his family, part of the population of Scotland, have just moved to Canada. The cost of their trip was more than \$1,700.



This is Anton Lang, who takes the part of Christ in the famous Oberammergau passion play which is now being given.



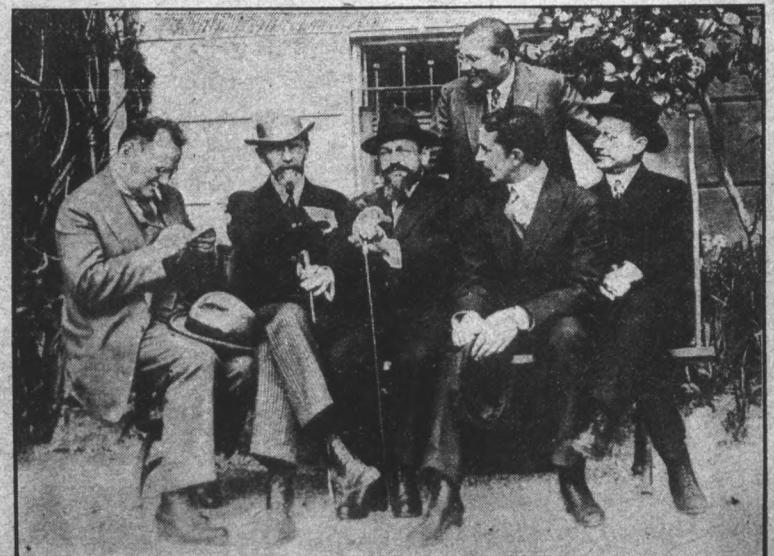
These Roumanian princesses are to be bridesmaids at a royal Serbian wedding.



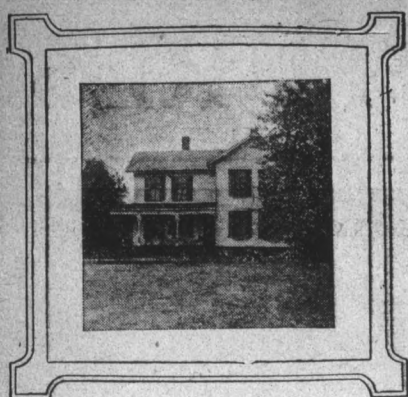
A view of the Detroit Masonic Temple now under construction. When completed it will be the largest in the world.



The Prince of Wales is elaborately entertained upon his visit to China. He is shown enjoying a sedan chair ride. He arrived in China about the time the Civil War there started.



Here is a group of Russian Soviet delegates to the Genoa Economic Conference. These are the delegates who are causing the conference so much concern.



The talent of success is nothing more than doing what you can well, and doing well whatever you do without a thought of fame.—Longfellow.

Woman's Interests



Are You Too Fat or Too Thin?

By May E. Foley

WOMEN will often do for beauty's sake what they would not do for any other reason, but no one can be really beautiful without being in good condition physically.

The tendency with most American women is to keep too thin when under thirty and weigh too much after thirty. Look at the table below and see if you weigh what you should, for your height and age. Use an average if your height measures in odd inches.

But whether you are too fat, too thin or just right, there are certain general rules of health that should be observed.

Table of Average Heights and Weights.—Women.

Age.	4 ft.	4 ft.	5 ft.	5 ft.	5 ft.	5 ft.	5 ft.	5 ft.	6 ft.
	8 in.	10 in.	0 in.	2 in.	4 in.	6 in.	8 in.	10 in.	0 in.
15	101	105	107	112	118	126	134	142	152
20	106	110	114	119	125	132	140	147	156
25	109	113	117	121	128	135	143	151	158
30	112	116	120	124	131	138	146	154	161
35	115	119	123	127	134	142	150	157	163
40	119	123	127	132	138	146	154	161	167
45	122	126	130	135	141	149	157	164	171
50	125	129	133	138	144	152	161	169	176
55	125	129	133	138	144	153	163	171	177

The body is more than half water, and so enough must be taken every day to supply the body tissue. Besides this, water inside the body is even more important as a cleanser than water which is used on the outside. Just as it keeps the outside clean, so it also carries off the inside impurities. As Ponce de Leon drank from the fountain of youth, so every woman could retain her youthful freshness for many additional years by drinking every day from eight to ten glasses of good pure water. One or two glasses, either hot or cold, should be drunk upon arising, at least twenty minutes before breakfast. This acts as a tonic to the digestive tract and aids the body in carrying off the waste, insuring bright eyes, clear complexion and freedom from headaches. Part of the daily water supply may be taken with fruit juices, as lemon or fruit-ades, either hot or cold.

The next aids to good looks are the fruits and vegetables, which come in many forms, from the lowly turnip to the aristocratic hothouse tomato, and from the ordinary apple to the less common pineapple. They are all best when eaten fresh and uncooked, but whether cooked, dried, canned, salted or stored, they are valuable. A good rule is at least one fruit or one vegetable each meal, and more if possible. Most fruits and vegetables contain considerable cellulose, which is not digested in the human body, but which gives bulk or ballast and acts like little scrubbing brushes in the digestive tract. Among the best brush-like foods are raw celery, cabbage and greens.

Vegetables and fruits have other good qualities to recommend them. Most of them are rich in vitamins, which stimulate the appetite and help growth. Green and highly colored vegetables, as lettuce, spinach and other greens, beets and carrots are rich in iron and make good red blood. Dandelion greens are an excellent spring tonic, and are much more pleasant to take and less expensive than medicine. If green foods are eaten during the

winter the doctor need not be consulted in the spring.

If you are too thin you will need to eat foods that are fattening. First, they should be simply prepared and easy to digest. No fried or rich foods should be eaten because they are a tax on the digestive system, and cause the body to lose energy which must be supplied by food needed to build up the body tissue. In other words, they are digested at too great expense to the body machinery. Milk, cream, milk and egg puddings, cream soups, cereals eggs prepared any way except fried, meats roasted, broiled or boiled

—these are all good, in addition to fruits and vegetables. A light lunch between meals and before going to bed, of crackers and milk, bread and butter, cocoa or plain ice cream, usually does not spoil the appetite and helps to add a little weight.

For the woman who weighs too much, the problem is usually harder than for the underweight person, and just as serious. Of course, the princi-

pal aim is to avoid foods which make body fat. Cream, fat meats, sugar and all starchy foods should be eaten sparingly, and all rich pastry and candy avoided. Bulky foods, which satisfy and yet do not add weight, as raw cabbage, spinach, lettuce, vegetables of all kinds and fruits may be eaten in abundance. Considerable lean meat may be taken if plenty of vegetables and fruits are eaten also. Skim-milk, buttermilk, or fruit juices between meals often satisfy the hunger and yet do not add flesh.

HOUSEHOLD HINTS.

If eggs are dipped in cold water before being put in hot water to boil the shells will not crack.—L. M. T.

A little sassafras kept on the pantry shelves will drive away ants.—L. M. T.

I have found that if one will jab an old pen in soap a few times, and then wipe it off, it will write.—B. B.

Pickled Currants—Wash and stone the fruit, and then weigh it. Cover with vinegar and let stand over night. In the morning add as many pounds of sugar as you had fruit, and stir every day until sugar is dissolved.

Heat some vinegar on the stove while the cabbage is cooking and the odor will not go through the house.

Oilcloths should never be scrubbed with suds, but carefully swept with a soft brush and washed with a cloth dipped in milk and water, half and half. Dry and polish with an old soft cloth. In this way the oilcloth will keep its original color a long time.—A. G.

Eat Strawberries and Cream

By Alta L. Littell

PROBABLY no other popular fresh fruit is so often unsuccessfully canned as strawberries. While there are many reasons for this, the most usual one is that the berry, which is very delicate and quickly cooked, is canned by the open kettle method and allowed to cook too long, thus losing its shape and color.

But however successfully canned, no cooked strawberry is so deliciously flavored as the fresh one, so the wise housekeeper makes the most of strawberry season and feasts her family while the picking is good. Strawberries and cream, strawberries washed and left with stems and hulls to be dipped in powdered sugar, strawberry shortcake, strawberry pie, strawberry mousse—many are the ways to serve the fresh fruit.

Opinions differ as to whether the shortcake shall be cake or biscuit, but no tastes disagree as to the amount of berries. In either case it is the berry that makes the dish, let the skeleton be what it will.

Strawberry pie is a favorite in some homes. Heap a pie shell with ripe, firm berries and another with whipped cream. Or it may be covered with a meringue and browned in the oven.

For years I have prepared strawberries for winter use in exactly two ways. One is sun-cooked—or "sun-kissed," as this family calls it. To

prepare, allow equal weights of sugar and fruit—using only perfect berries—and two cups of cold water for every three pounds of sugar. Cook the sugar and water until it threads, then add berries and cook for fifteen minutes after the fruit begins again to boil. Pour onto large platters, cover with glass and set in the sun until the syrup thickens. If you have an unused room with a southwest exposure this is a good place to finish the cooking, as it is safe from accidents and dust. The platters may be moved from the south windows to the west as the sun moves, and two or three days should suffice to finish the fruit. The berries may be stored the same as jelly.

Sun-cooked berries are delicious for tart filling, jelly rolls, filling for layer cakes, and one glass made into a mousse with a pint of whipped cream makes a dessert fit for a king.

For canned berries I use a government bulletin method which gives a delicious flavor. Wash and hull the fruit and put in an enameled kettle, which is not chipped, or any acid-proof kettle. Allow one-half pint of sugar and two tablespoons of water to every quart of berries. Boil slowly fifteen minutes, cover and let stand over night in the kettle. In the morning pack the cold berries in hot, sterilized jars, put on new, sterilized rubbers, and screw down the tops until they just touch the rubber. Place in the boiler—or

canner—and boil exactly eight minutes. Remove, tighten tops, and wrap in paper. These may also be used to make strawberry mousse.

To make the mousse whip one pint of cream with one-fourth teaspoon of salt and one cup of the fruit until it is solid to the bottom of the dish. Then turn into a mould with a tight top, and pack in equal parts of salt and ice for three hours. If the cream is thin soften a teaspoonful of gelatin in cold water, melt over a dish of hot water.

HOW TO DYE EFFICIENTLY.

Household Editor.—I am sending directions for dyeing with home-made dyes, at the request of the editor. When dyeing cotton boil the goods in the solution for from thirty to forty minutes. If wool, first boil the bark or root solution, and then soak the goods from one to two hours, until the desired shade is obtained. Following are the solutions: Black currant juice to dye red. Hickory bark for black. The inner bark of white birch for orange. Hoop-ash for yellow. The roots and bark of dogwood for scarlet. Indigo herb for blue.—M. P., Dafter, Mich. (Thank you.—Ed.)

To Color Cotton Brown.—For ten pounds of goods use one-half pound of catechu dissolved in hot soft water, and one-half ounce of blue vitriol. Put the two together in a tub with enough warm water to cover the goods. Stir in this twenty minutes, then lift out and put into another tub in which has been dissolved two ounces of bichromate of potash. Stir in this twenty minutes, wash, and dry. If not dark enough repeat the process.

Blue on Cotton.—For one pound dissolve in sufficient cold water to cover one ounce of copperas. In another vessel of hot water dissolve one ounce of prussiate potash, (potassium ferricyanide). Dip the goods in the copperas water, wring them out and dip in potash water. Repeat the process three times, air the goods, add to the goods one-fourth ounce of vitriol, stir well, then put the goods in and stir constantly ten minutes. Hang up to dry.—Mrs. L. E. C., Ann Arbor, Mich.

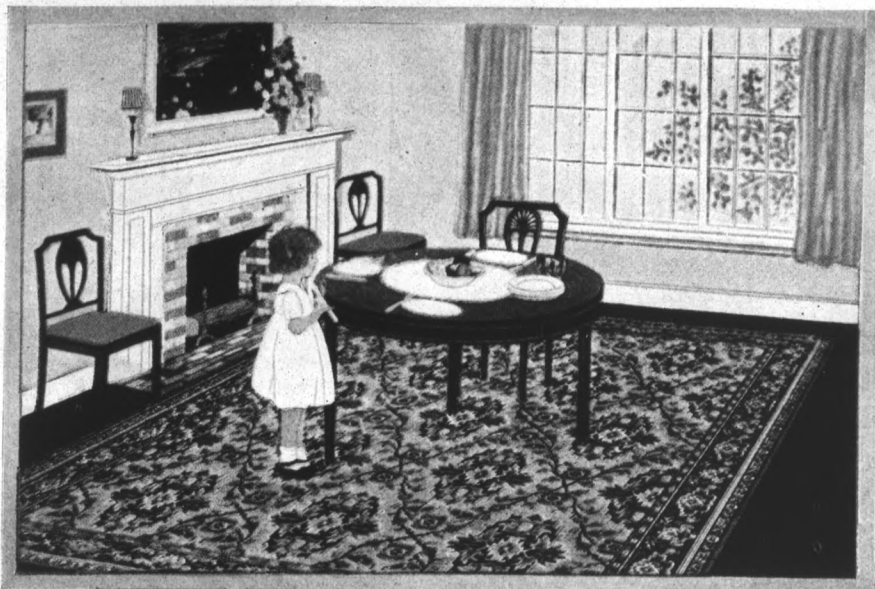
(Thanks are due L. E. C. for the directions.—Ed.)

KEEP MILK AND BUTTER COOL.

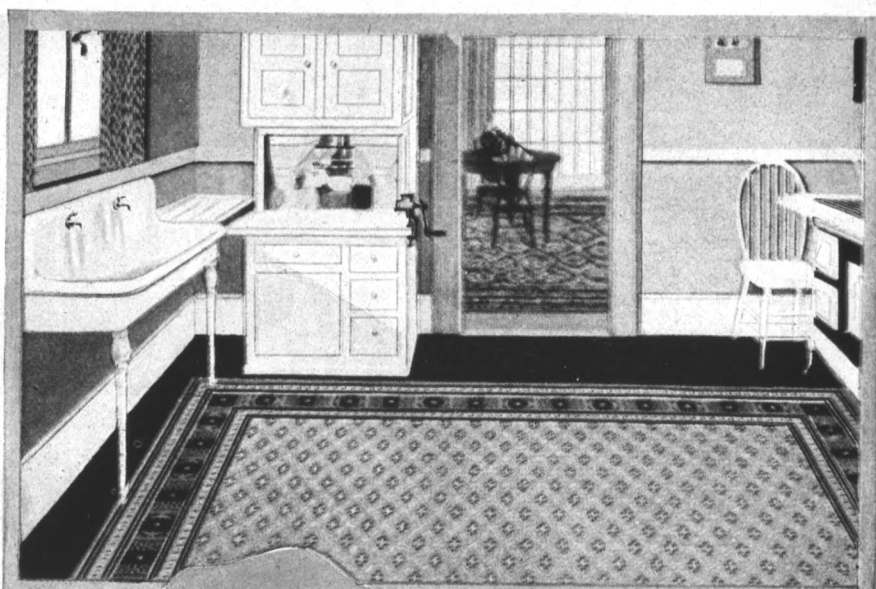
DURING hot weather the housewife who has neither ice nor cellar finds great difficulty in keeping milk sweet and butter in good shape. The following method, suggested by Fred G. Person, of the Colorado Agricultural College, if used, will be of considerable assistance in this difficulty.

Pack a large stone jar, three, four, or five gallon capacity, in a box of wet sand having the sand five or six inches thick under and around the sides of the jar. Place a tight cover over the jar and box and set in the shade. The milk and butter that is placed in this jar will keep in excellent shape for some time. Keep the sand thoroughly wet as this is the important factor.

Samantha says: Some women who are mighty particular about who their children play with will buy all the latest slang, smut, and profanity for their pianos and graphophones.



The rug shown above is Congoleum Gold-Seal Art-Rug No. 388. In the 9 x 12 foot size the price is only \$16.20.



The rug in the kitchen is Congoleum Gold-Seal Rug No. 508. In the 6x9 foot size the price is only \$8.10.



Who wouldn't be proud of this blue and tan design with its quaint and fascinating motif? It's Congoleum pattern No. 396.



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Cool and really American is this charming conventional design which so many women adore. It's Congoleum pattern No. 508.



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These Beautiful Rugs are Practical and Economical—

A glance at the patterns illustrated here can give you only a slight idea of the beauty and charm of Gold-Seal Congoleum Art-Rugs.

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Dirt will not grind into them, spilled things will not stain or penetrate them.

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With Congoleum Rugs on your floors you bid good-bye to the tiresome scrubbing that wooden floors need and to the back-breaking cleaning that woven rugs require.

To clean them, all you ever have to do is to go over them lightly with a damp mop.

You don't have to tack or fasten these modern rugs to the floor. They lie perfectly flat with never a wrinkle or turned-up edge or corner.

No matter which room of your home needs a new rug, you can find a Congoleum pattern that will suit it in size and coloring. All the Congoleum Rugs are attractive, from the simple tile and wood-block designs for the kitchen to the handsome, elaborate ones for bedrooms and dining rooms. The low prices will be a pleasant surprise.

Note the Low Prices

6 x 9 feet	\$ 8.10	9 x 9 feet	\$12.15
7½ x 9 feet	10.10	9 x 10½ feet	14.15
		9 x 12 feet	\$16.20

The rugs illustrated are made only in the five large sizes. The small rugs are made in other designs to harmonize with them.

1½ x 3 feet	\$.50	3 x 4½ feet	\$1.50
3 x 3 feet	1.00	3 x 6 feet	2.00

Owing to high freight rates, prices west of the Mississippi, in the South and in Canada are higher than those quoted.

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No. 4017: Junior's Dress. Cut in 3 sizes: 12, 14 and 16 years. A 14-year size requires $4\frac{1}{4}$ yards of 32-inch material.

No. 4018: Girls' Dress. Cut in 4 sizes: 6, 8, 10, and 12 years. A 10-year size requires $3\frac{3}{4}$ yards of 32-inch material.

No. 4002: Girls' Dress. Cut in 4 sizes: 4, 6, 8, and 10 years. A 6-year size requires $3\frac{1}{4}$ yards of 36-inch material.

No. 3980: Child's Dress. Cut in 4 sizes: 1, 2, 3 and 5 years. A 3-year size will require $1\frac{1}{2}$ yard of 36-inch material.

No. 3996: Girls' Dress. Cut in 4 sizes: 6, 8, 10 and 12 years. A 10-year size requires $3\frac{3}{4}$ yards of 32-inch material.

No. 3982: Boys' "Overalls." Cut in 4 sizes: 2, 3, 4 and 5 years. A 4-year size requires $2\frac{1}{4}$ yards of 27-inch material.

No. 4020: Misses' Dress. Cut in 3 sizes: 16, 18 and 20 years. An 18-year size requires $5\frac{3}{4}$ yards of 32-inch material.

No. 4003: Ladies' "Apron Frock." Cut in 4 sizes: Small, 34-36; medium, 38-40; large, 42-44; extra large, 46-48 inches bust measure. A medium size requires $4\frac{1}{4}$ yards of 36-inch material. The width at the foot is about 2 $\frac{1}{2}$ yards.

No. 4027: Ladies' Dress. Cut in 7 sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38-inch size requires $6\frac{3}{4}$ yards of 40-inch material. The width of the skirt at the foot is about 2 yards.

No. 4025: Ladies' Dress. Cut in 7 sizes: 34, 36, 38, 40; 42, 44, and 46 inches bust measure. A 38-inch size requires $4\frac{1}{4}$ yards of 40-inch material. The width at the foot is about 2 $\frac{1}{4}$ yards.

Daisy Design Chemise Yoke

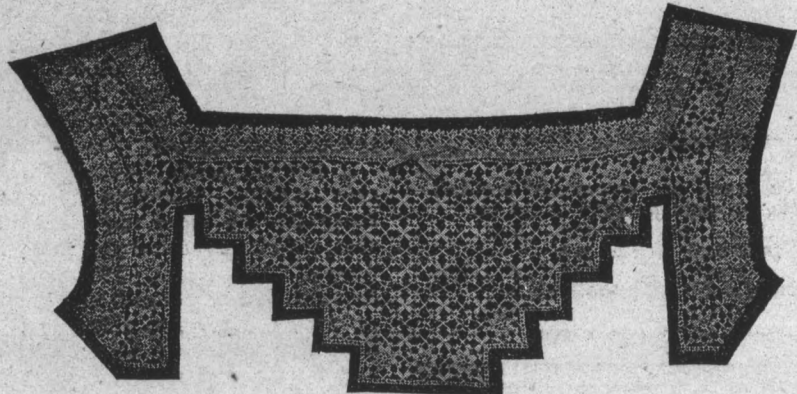
Explanations.—Ch means chain stitch (pull loop through the one on hook); sc, single crochet (with one loop on hook, pull loop through both the designated stitch of preceding row and the loop on hook); dc, double crochet (pull loop through stitch, then thread over hook and pull through both loops on hook); tr, treble crochet (thread over hook, put hook through stitch below and pull loop through the stitch, thread over hook and through two loops on hook, thread over hook and through remaining two loops); dtr, long or double treble crochet (thread twice over hook, put hook through designated stitch and pull the loop through, which gives four loops on hook, thread over hook and through two loops, thread over hook and through remaining two loops).

The design for this chemise yoke,

loop of the chain only. The three points which come together on both sides of this must be left free. Allow seven patterns for the shoulder strap, and attach to the back in the same way.

Now work the outline around the inside of sleeves and the base of the yoke, beginning at the corner of the gusset of the right sleeve.

First Row.—Dc in the point, 12 ch; 1 dc in loop, 12 ch; 1 dc in the junction of the next two points. Proceed thus to the loop before the three free points, then 11 ch, 1 dc in first point; 1 tr in second, 1 dc in third; 11 ch, 1 dc in next loop; 12 ch, 1 dc in junction of next three points; 12 ch, 1 dc in



Would You Not Like to Make a Daisy Design Yoke?

although apparently intricate, will be found quite easy to make. Cotton No. 50 or 60 will be suitable.

The yoke is composed of two patterns, a rosette design and a lace design, both of which are square, and the little crosses are made in the joining together of these squares. The front consists of rows of lace designs, headed and bordered by the rosette design. The back is a row of the rosette pattern, as also are the sleeves. The whole is trimmed with a running for a ribbon and a lace edging.

For the Rosette Design.

First Row.—Make a ring of 6 ch, in which work 1 dtr and 3 ch eight times, then join.

Second Row.—Sc 1 on the top of dtr, 1 ch; 1 tr, 3 dtr; 1 tr in the middle stitch of 3 ch, 1 ch. Repeat seven times and slip stitch to the top of first scallop.

Third Row.—Tr 1, 1 picot (of 5 ch, 1 dc in the first); 1 tr in center dtr; 7 ch, 1 tr, picot; 1 tr on next scallop, 9 ch, miss 2; 1 dc and 4 tr in next 5 ch; 2 ch. Repeat three times.

The squares are joined side by side by two points and the loop of chain between.

For the Lace Design.

First Row.—Ch 13, 1 tr in first ch; 9 ch, 1 tr in the same place; 9 ch, 1 tr again in the same place; 9 ch and join to the fourth of the 13 ch. This forms a small square. Slip stitch (same as sc) to the fifth 9 ch.

Second Row.—Dtr 2 divided by a picot in the middle stitch of loop; 8 ch, miss 2, 1 dc and 4 tr in next five stitches, 1 ch; 2 dtr divided by a picot in the same place as before, 9 ch. Repeat three times.

These join together exactly as the rosette designs. Commence by working a length of 13 rosette patterns for the front, then across the middle of this, add 4 graduated rows of lace patterns, 1st nine, 2nd seven, 3rd five, 4th three. As the points come together the little crosses will appear. At each end of these rows place a rosette design, and three across the bottom. The front is now formed. The length of 13 rosette designs for the back is next worked as previously directed.

For the sleeves 15 designs are required, with one extra for a gusset, which is put in cornerwise. Join the sleeves to the front at the fourth pattern, counting from the gusset, by the

next loop; 12 ch, 1 dc in corner point. Continue in this manner, working 12 ch around the sleeves and across the back.

Second Row.—Of small holes, 1 tr, 2 ch; miss 2 and repeat around, working 2 tr with 5 ch between at the corners, and contracting slightly in the hollows to keep the outline of the squares.

Lace Edging for Neck and Sleeves.

First Row.—Work 12 ch from point to point, as before, all around the neck. At the corners where the three free points lie make 1 dc in the first, 1 tr in the second, and 1 dc in the third.

Second Row.—Small holes as before, contracting slightly at the corners. In the succeeding rows the corners must be so contrived that the work lies flat.

Third Row.—For the ribbon 4 dtr are worked off together in a hole; 4 ch, miss 1 hole; 1 dtr in next tr; 4 ch, miss 1 hole and repeat.

Fourth Row.—Dc 2, close before the single dtr; 1 picot, 2 dc close after, 7 ch. Repeat.

Fifth Row.—Tr 4 with 3 ch between each in the center stitch of 7 ch; 1 ch and repeat.

Sixth Row.—Sc 1 in second tr of group, 1 ch; 1 tr, 3 dtr and 1 tr in second stitch of center 3 ch; 1 ch, 1 sc in next tr, 6 ch. Repeat.

Seventh Row.—Dc 1 in loop, 5 ch; sc 1 on top of scallop, 5 ch. Repeat.

Eighth Row.—Tr 1 in last stitch of first 5 ch; 1 picot, 1 dtr in the sc at top of scallop; 1 picot, 1 tr in the middle threads of dtr; 1 picot, 1 tr in next ch, 2 ch. Repeat.

When the edging is worked around the sleeves the yoke is complete. To attach to the garment the front must be firmly basted in position, and buttonhole worked in each stitch.

This pattern was taken from our Needlecraft Book No. 65, which contains many other useful patterns, and can be had by sending fifteen cents to The Michigan Farmer, Detroit, Mich. Also better send fifteen cents for our Needlecraft Book No. 10, which gives full directions, plainly illustrated, for making all kinds of crochet stitches; it is very useful to beginners in crocheting.

HOME QUERIES.

C. D. J., Wyandotte.—Make a cement of plaster of paris and water and use to fasten the brass on the lamp bowl.

Mrs. A. M. H.—To remove ordinary

discolorations from a marble slab rub well with a paste made of two parts sodium carbonate, one part pumice stone and one part finely powdered chalk, mixed with a little water. Then wash off with soap and water. If the marble is white cover with a paste made of Fuller's earth and hot water and let stand for twenty-four hours. Then scour with soft soap.

E. B.—The moth is a tiny white miller, a little larger than a mosquito. They are attracted by the light, and often fly about after the lamps are lighted. It has a rough-haired head and narrow, pointed wings. I should view with suspicion any small miller found in hiding, and treat it thoroughly to a liberal dose of gasoline to be on the safe side.

Rural Health and Sanitation

Conducted by Dr. C. H. Lerrigo

ANSWER IN NEXT ISSUE.

PLEASE be sure to give me an answer in the next issue of the paper. This is a very important matter to me."

I quote from a letter that came today. Every week I get a number of letters that express this desire, that an answer be given in the very next issue.

To save you from disappointment I may as well tell you that in nine cases out of ten this is impossible. The next issue of the paper is probably ready to go to press when your letter gets to me. I can't even promise that your reply will go in the next following. Nor can I assure you that it will be printed in the paper at all. If it is just a matter that concerns you, and no one else, the chances are that it won't be printed, because space is limited and the few letters that can be answered in the paper must be those of general interest.

But you can get an answer, very quickly, on any matter concerning health, by the simple process of putting in with your letter an envelope addressed to yourself, and stamped. I suppose the reason you have neglected this is because you think that I don't answer letters personally. But I do. It is part of my business. And it is much better for you than depending upon an answer through the paper. About the only letters coming to me that I do not answer are those in which the writer does not even give name and address.

NO GOVERNING LAW.

Is it the law that a woman shall have a doctor in attendance at childbirth? I know many women who had large families without either a doctor

to suit your particular case. It is always a wise thing for a fat person to make sure by a physical examination that he is free from disease. If there is no disease there is just one remedy. Cut down your eating. Cut it down twenty per cent for two weeks. If that does not do the business cut it another ten per cent. You will not suffer.

FEVER WITH TUBERCULOSIS.

Does tuberculosis of all kinds, bone, glands, etc., as well as of the lungs, cause a daily fever?—B. C.

At some stage of the disease there is a daily fever with all cases of tuberculosis, no matter what the tissue affected. The fact that fever is not present does not prove that the case is non-tuberculous, however, because there are many stages in which the disease is still contagious but does not produce fever.

GOITRE MAY PRODUCE FEVER.

Can a toxic exophthalmic goitre cause a daily temperature of from 99.2 to 99.6?

Exophthalmic goitre may produce either high or low temperatures. In some cases of profound poisoning it sends the temperature down below normal; in others it may produce four or five degrees of fever.

ONYCHIA OF FINGER-NAILS.

Have had trouble with my finger nails for several years, but getting so bad they interfere with my work now. It commenced with the thumbs becoming red and swollen around the back of the nails. There is intense itching at times, seems to be at the root of nails, then gets painful and next morning pus oozes from between for a day or so, then the same thing over. The nails are rough and thick and part of

How to Order the Patterns

THE dress designs shown on the opposite page are all simple, for simplicity is the keynote for this summer's styles. They can easily be made by home-dressmakers at a very small expense. Order patterns direct from Michigan Farmer, Detroit, Michigan, and be sure to state pattern number and size wanted. The price is twelve cents each.

or a registered midwife and had no trouble, not so very many years ago either, but someone told me it is now against the law.—A. S.

There is no law that can make a woman have any attendant at childbirth. The law does provide, however, that all persons who attend, for pay, must be registered as midwives or physicians. It is a wise law and saves the lives of many mothers and babies.

OBESITY.

What is the cause of obesity? Is there any way to get rid of too much flesh? There are a lot of companies advertising a remedy but the makers are usually in need of some of the dope. Could you tell me of something to help? Please do.—Reader.

Sometimes obesity is due to disease. Then medicine is needed, but to do any good it must be exactly the right drug

my nails are loose from the top half way back. They are very painful after doing a big washing, and at times the skin becomes very dry and white and can be scaled off around the nails. I have tried liniments, salves, also poulticing, but get no benefit. Please tell me what to do for it as I must work with my hands doing housework, baking bread and the like, for a large family.—J. C. F.

The trouble seems to be onychia, probably of the simple form since you are otherwise well. Use peroxide of hydrogen to get rid of the pus, then dress the nails with powdered boric acid, pushing the powder in around the nails where possible. At night apply a compress of boric acid and water. Where this condition is due to eczema of the nails much relief is obtained by wrapping the ends of the fingers in an ointment of salicylic acid, half-dram to the ounce.

THE CROSS-CUT — By Courtney Ryley Cooper

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CHAPTER I.

IT was over. The rambling house, with its rickety, old-fashioned furniture—and its memories—was now deserted, except for Robert Fairchild, and he was deserted within it, wandering from room to room, staring at familiar objects with the unfamiliar gaze of one whose vision suddenly has been warped by the visitation of death and the sense of loneliness that it brings.

Loneliness, rather than grief, for it had been Robert Fairchild's promise that he would not suffer in heart for one who had longed to go into a peace for which he had waited, seemingly in vain. Year after year, Thornton Fairchild had sat in the big armchair by the windows, watching the days grow old and fade into night, studying sunset after sunset, voicing the vain hope that the gloaming might bring the twilight of his own existence—a silent man except for this, rarely speaking of the past, never giving to the son who worked for him, cared for him, worshiped him, the slightest inkling of what might have happened in the dim days of the long ago to transform him into a beaten thing, longing for the final surcease. And when the end came, it found him in readiness, waiting in the big armchair by the windows. Even now, a book lay on the frayed carpeting of the old room, where it had fallen from relaxing fingers. Robert Fairchild picked it up, and with a sigh restored it to the grim, fumed oak case. His days of petty sacrifices that his father might while away the weary hours with reading were over.

Memories! They were all about him, in the grate with its blackened coals, the old-fashioned pictures on the walls, the almost gloomy rooms, the big chair by the window, and yet they told him nothing except that a white-haired, patient, lovable old man was gone—a man whom he was wont to call "father." And in that going, the slow procedure of an unnatural existence had snapped for Robert Fairchild. As he roamed about in his loneliness, he wondered what he would do now, where he could go; to whom he could talk. He had worked since sixteen, and since sixteen there had been few times when he had not come home regularly each night, to wait upon the white-haired man in the big chair, to discern his wants instinctively, and to sit with him, often in silence, until the old onyx clock on the mantel had clanged eleven; it had been the same program, day, week, month and year. And now

Robert Fairchild was as a person lost. The ordinary pleasures of youth had never been his; he could not turn to them with any sort of grace. The years of servitude to a beloved master had inculcated within him the feeling of self-impelled sacrifice; he had forgotten all thought of personal pleasures for their sake alone. The big chair by the window was vacant, and it created a void which Robert Fair-

feared to learn. Once, on a black, stormy night, they had sat together, father and son before the fire, silent for hours. Then the hand of the white-haired man had reached outward and rested for a moment on the young man's knee.

"I wrote something to you, Boy, a day or so ago," he had said. "That little illness I had prompted me to do it. I—I thought it was only fair to

which had served as his father's bedroom.

There he hesitated before the little iron safe in the corner, summoning the courage to unlock the doors of a dead man's past. At last he forced himself to his knees and to the numerals of the combination.

The safe had not been opened in years; that was evident from the creaking of the plungers as they fell, the gummy resistance of the knob as Fairchild turned it in accordance with the directions on the paper. Finally, a great wrench, and the bolt was drawn grudgingly back; a strong pull, and the safe opened.

A few old books; ledgers in sheepskin binding. Fairchild disregarded these for the more important things that might lie behind the little inner door of the cabinet. His hand went forward, and he noticed, in a hazy sort of way, that it was trembling. The door was unlocked; he drew it open and crouched a moment, staring, before he reached for the thinner of two envelopes which lay before him. A moment later he straightened and turned toward the light. A crinkling of paper, a quick-drawn sigh between clenched teeth; it was a letter; his strange, quiet, hunted-appearing father was talking to him through the medium of ink and paper, after death.

Closely written, hurriedly, as though to finish an irksome task in as short a space as possible, the missive was one of several pages—pages which Robert Fairchild hesitated to read. The secret—and he knew full well that there was a secret—had been in the atmosphere about him ever since he could remember. Whether or not this was the solution of it, Robert Fairchild did not know, and the natural reticence with which he had always approached anything regarding his father's life gave him an instinctive fear, a sense of cringing retreat from anything that might now open the doors of mystery. But it was before him, waiting in his father's writing, and at last his gaze centered; he read: My Son:

Before I begin this letter to you I must ask that you take no action whatever until you have seen my attorney—he will be yours from now on. I have never mentioned him to you before; it was not necessary and would only have brought you curiosity which I could not have satisfied. But now, I am afraid, the doors must be unlocked. I am gone. You are young, you have been a faithful son and you are deserving of every good fortune that may possibly come to you. I am praying that the years have made a difference, and that fortune may smile upon you as she frowned on me. Cer-

I'm Always In A Stew

By Genevieve D. O'Neill

There's pop an' mom an' 'Lizabeth—
They don't do nothin' wrong.
That's what you'd think from hearin' what
They say the whole day long.
But jus' becus I'm little, shucks!
I'm allus in a stew—
I'm scolded like I don't know what,
Weren't they once little, too?
If I was you an' you was me,
Say, now, what would you do?

The other day I happened past
The cupboard down the hall
An' there I saw upon the shelf
What I like best of all—
The nicest honey—my 'stwas good,
I took a little sip
An' jus' stuck in my thumb for more—
A teeney little dip—
When 'long come Aunt Elizabeth
Who grabbed me by the hip.

An' then, not very long ago,
I happened past the shed.
We have a can of paint in there—
A dandy shade of red.
Now, red's my favorite color, an'
We have a cat pure white.
I thought I'd make her prettier
An' so I grabbed her tight
An' painted her a lovely red—
'Twas just the other night.

But mom an' pop an' Lizabeth—
My goodness gracious me!

They raved an' swore an' scolded
Jus' as mad as they could be.
An' then I got a lickin'. My!
I feel that lickin' yet.
If pop himself had used that paint,
They wouldn't mind, you bet!
You wait till I grow up an' see!
They'll every one regret.



child could neither combat nor overcome.

What had been the past? Why the silence? Why the patient, yet impatient wait for death? The son did not know. In all his memories was only one faint picture, painted years before in babyhood: the return of his father from some place, he knew not where, a long conference with his mother behind closed doors, while he, in child-like curiosity, waited without, seeking in vain to catch some explanation. Then a sad-faced woman who cried at night when the house was still, who faded and who died. That was all. The picture carried no explanation.

And now Robert Fairchild stood on the threshold of something he almost

you. After I'm gone, look in the safe. You'll find the combination on a piece of paper hidden in a hole cut in that old European history in the bookcase. I have your promise, I know—that you'll not do it until after I'm gone."

Now Thornton Fairchild was gone. But a message had remained behind; one which the patient lips evidently had feared to utter during life. The heart of the son began to pound, slow and hard, as, with the memory of that conversation, he turned toward the bookcase and unlatched the paneled door. A moment more and the hollowed history had given up its trust, a bit of paper scratched with numbers. Robert Fairchild turned toward the stairs and the small room on the second floor

AL ACRES—Al's Fertilizer Would Undoubtedly Prove a Bonanza as a Hair Tonic.

—By Frank R. Leet.



tainly, she can injure me no longer. My race is run; I am beyond earthly fortunes.

Therefore, when you have finished with this, take the deeds inclosed in the larger envelope and go to St. Louis. There, look up Henry F. Beamish, attorney-at-law, in the Princess Building. He will explain them to you. I cannot find the strength, now that I face it, to tell you what you may find if you follow the lure that the other envelope holds forth to you.

There is always the hope that fortune may be kind to me at last, and smile upon my memory by never letting you know why I have been the sort of man you have known, and not the jovial, genial companion that a father should be. But there are certain things, my son, which defeat a man. It killed your mother—every day since her death I have been haunted by that fact; my prayer is that it may not kill you, spiritually, if not physically. Therefore is it not better that it remain behind a cloud until such time as fortune may reveal it—and hope that such a time will never come? I think so—not for myself, for when you read this, I shall be gone; but for you, that you may not be handicapped by the knowledge of the thing which whitened my hair and aged me, long before my time.

If he lives, and I am sure he does, there is one who will hurry to your aid as soon as he knows you need him. Accept his counsels, laugh at his little eccentricities if you will, but follow his judgment implicitly. Above all, ask him no questions that he does not care to answer—there are things that he may not deem wise to tell. It is only fair that he be given the right to choose his disclosures.

There is little more to say. Beamish will attend to everything for you if you care to go. Sell everything that is here; the house, the furniture, the belongings. It is my wish, and you will need the capital—if you go. The ledgers in the safe are only old accounts which would be so much Chinese to you now. Burn them. There is nothing else to be afraid of—I hope you will never find anything to fear. And if circumstances should arise to bring before you the story of that which has caused me so much darkness, I have nothing to say in self-exculpation. I made one mistake—that of fear—and in committing one error, I shouldered every blame. It makes little difference now. I am dead—and free.

My love to you, my son. I hope that wealth and happiness await you. Blood of my blood flows in your veins—and strange though it may sound to you—it is the blood of an adventurer. I can almost see you smile at that! An old man who sat by the window, staring out; afraid of every knock at the door—and yet an adventurer! But they say, once in the blood, it never dies. My wish is that you succeed where I failed—and God be with you!

Your Father.

For a long moment Robert Fairchild stood staring at the letter, his heart pounding with excitement, his hands grasping the foolscap paper as though with a desire to tear through the shield which the written words had formed about a mysterious past and disclose that which was so effectively hidden. So much had the letter told—and yet so little! Dark had been the hints of some mysterious, intangible thing, great enough in its horror and its far-reaching consequences to cause death to one who had known of it and a living panic for him who had perpetrated it. As for the man who stood now with the letter clenched before him, there was promise of wealth, and the threat of sorrow, the hope of happiness, yet the foreboding omen of discoveries which might ruin the life of the reader as the existence of the writer had been blasted—until death had brought relief. Of all this had the letter told, but when Robert Fairchild read it again in the hope of something tangible, something that might give even a clue to the reason for it all, there was nothing. In that super-calmness which accompanies great agitation, Fairchild folded the paper, placed it in its envelope, then slipped it into an inside pocket. A few steps and he was before the safe once more and reaching for the second envelope.

Heavy and bulky was this, filled with tax receipts, with plats and blue-

(Continued on page 669).



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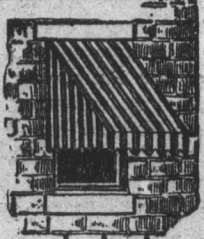
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WANTED To hear from owner of land for sale. O. K. HAWLEY, Baldwin, Wisconsin.

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An Indestructible Book

Our Weekly Sermon—By N. A. McCune

ONCE more it is the case of the bad son of a good father. Such are more frequently seen than good sons of bad fathers, though the latter are by no means unknown. Parents do strange things. The very conditions and training that have been the making of a good man, they will often ignore, in the training of their own son. Amon was not a good king, yet he had the sense to provide a splendid tutor for his son. Josiah was a good king, but we are led to infer that he did not make any such provision for his own sons. And they showed it. One son managed to be king for three months, and the other for eleven years, and both were distinguished for their weaknesses.

In the words of the historian, they "did that which was evil in the sight of Jehovah."

Why is it that good fathers so frequently make the fatal mistake of not providing for their sons as well as their fathers provided for them? I mean, in a moral and spir-

itual way, not in clothing them and feeding them and sending them off to college. It is easier, however, to describe than to do. A boy is reared amid conditions that compel him to work and to make an effort for everything he gets. In doing that, he acquires character. By middle life, say, he is well to do. His sons do not need to toil as he did, and he boasts that they don't, and, lo! they do not possess the power of application, the ability to meet hard conditions and surmount them, the moral fibre to resist temptation. Pity the poor little rich boy! Pity the king's son! He doesn't know what real life is. Hence when the son of wealth and social position does develop character, and all the qualities that make the strong man, he is usually a very strong man. Such was Josiah, and such were Gladstone, Washington, Roosevelt, Florence Nightingale, and such is Reverend Maude Royden, the great English woman preacher.

WHEN Josiah was told of God's teaching through the finding of a forgotten book, he responded by declaring a religious revival. When his son is told of God's teaching through the prophet, he responds by cutting up the book and throwing it into the fire. History is made up of retrogression as well as progress, though the general course of history moves forward.

Men have often attempted to stifle the message of the Book. Sometimes they have burned it, sometimes kings have forbidden its use among their people. But thus far the Book has always survived these attacks. In the early days of Christianity, the order went forth to seize all copies of the gospels and other Christian writings and destroy them. Hastily were the precious documents gathered up, placed in stone jars and buried. In the dry air of the east, they were perfectly preserved. In recent years, many of these ancient manuscripts have been discovered, until fifteen hundred copies of various parts of the great book are now in various libraries of the world. One of these versions is the Sinaitic. It was found by Dr. Tischendorf, a German scholar who spent his life studying the ancient versions of Scripture.

One day in 1844 while he was staying in St. Catherine's convent at the foot of Mount Sinai, he picked some

leaves of parchment out of a box where they had been thrown, to build fires with. After a few moments examination he knew that he had found one of the most ancient copies of the Old Testament. He was so overjoyed however, that the monks began to suspect that these sheets were valuable and they refused to part with any more of them.

FIFTEEN years later Tischendorf came back, armed with a commission from the Russian emperor. He was allowed to look at a bundle of parchments, tied up with a piece of string. Going into his room alone he spent the night looking at them. "I knew," he says, "that I held in my hand one of the most precious Biblical treasures in existence." After some negotiations he was successful in getting possession of this bundle of worthless-looking material, and took it to Europe. It is now known as the Sinaitic manuscript and is one of three of the most valuable manuscripts of the Bible in existence. It consists of the New Testament complete, parts of the Old Testament complete, and some apocryphal books. It is in the library at Petrograd (if the bolsheviks haven't destroyed it). Probably the most successful method of destroying the Bible is by ignoring it. Let it be kept in the house. Let it contain the family record of births and deaths, but let it remain on the top shelf of the bookcase, to be dusted off at each spring cleaning. That is the most successful method for making the Bible an unknown book.

A bishop once called at a home, and while waiting for the father to come, he talked with the little girl. She said she went to Sunday school. "Then," said the bishop, "You must know what is in the Bible." "O, yes, sir, I know what's in the Bible. Sister's picture is in it, and the picture of her fellow, taken when they were out at the lake. And a lock of baby John's hair is in it, and a receipt for making angel food cake. They're all in it."

THE Bible is an expanding book. It grows. Not that chapters are added to the Bible, but that it grows in one's life. The Bible will mean a thousand times more to one person than to another. Chapters that do not make any impression on a child hold a universe of meaning for the adult. In times of national peril, or in hours of soul distress it almost seems as though certain passages were written for the particular occasion. In the Sepoy rebellion, when the outlook for relief for a regiment of British soldiers was black, General Havelock read the forty-sixth psalm: "The Lord of hosts is with us, the God of Jacob is our refuge." More than that, the Spirit that permeates the Bible is working in the world today. There are chapters of missionary conquest as wonderful as any narrated in the book of Acts. Read the life of Mary Slessor, a white woman who for thirty years was the only white person in the midst of African tribes. Or read the story of Stewart of Lovedale. God is still at work. Those who hear the divine voice are brothers of Jeremiah and all others who have wrought at His command.

THE SUNDAY SCHOOL LESSON FOR JUNE 4.

SUBJECT.—Jehoiakim Tries to Destroy God's Word.

LESSON.—Jeremiah 36.

GOLDEN TEXT.—The word of our God shall stand forever.—Isa. 40:8.

THE CROSS-CUT

By Courtney Ryley Cooper
Copyright by Little, Brown & Company

(Continued from page 667).

prints and the reports of surveyors. Here was an assay slip, bearing figures and notations which Robert Fairchild could not understand. Here a receipt for money received, here a vari-colored map with lines and figures and conglomerate designs which Fairchild believed must relate in some manner to the location of a mining camp; all were aged and worn at the edges, giving evidence of having been carried, at some far time of the past, in a wallet. More receipts, more blue-prints, then a legal document, sealed and stamped, and bearing the words: County of Clear Creek, ss. State of Colorado,

DEED PATENT.

KNOW ALL MEN BY THESE PRESENTS: That on this day of our Lord, February 22, 1892, Thornton W. Fairchild, having presented the necessary affidavits and statements of assessments accomplished in accordance with—

On it trailed in endless legal phraseology, telling in muddled, attorney-like language, the fact that the law had been fulfilled in its requirements, and that the claim for which Thornton Fairchild had worked was rightfully his, forever. A longer statement full of figures, of diagrams and surveyor's calculations which Fairchild could neither decipher nor understand, gave the location, the town site and the property included within the granted rights. It was something for an attorney, such as Beamish, to interpret, and Fairchild reached for the age-yellowed envelope to return the papers to their resting place. But he checked his motion involuntarily and for a moment held the envelope before him, staring at it with wide eyes. Then, as though to free by the stronger light of the window the haunting thing which faced him, he rose and hurried across the room, to better light, only to find it had not been imagination; the words still were before him, a sentence written in faint, faded ink proclaiming the contents to be "Papers relating to the Blue Poppy Mine," and written across this a word in the bolder, harsher strokes of a man under stress of emotion, a word which held the eyes of Robert Fairchild fixed and staring, a word which spelled books of the past and evil threats of the future, the single, ominous word:

"Accursed!"

CHAPTER II.

ONE works quickly when prodded by the pique of curiosity. And in spite of all that omens could foretell, in spite of the dull, gloomy life which had done its best to fashion a matter-of-fact brain for Robert Fairchild, one sentence in that letter had found an echo, had started a pulsating something within him that he never before had known:

"—It is the blood of an adventurer."

And it seemed that Robert Fairchild needed no more than the knowledge to feel the tingle of it; the old house suddenly became stuffy and prison-like as he wandered through it. Within his pocket were two envelopes filled with threats of the future, defying him to advance and fight it out—whatever it might be. Again and again pounded through his head the fact that only a night of travel intervened between Indianapolis and St. Louis—within twelve hours he could be in the office of Henry Beamish. And then—

A hurried resolution. A hasty pack-

ing of a traveling bag and the cashing of a check at the cigar store down on the corner. A wakeful night while the train clattered along upon its journey. Then morning and walking of streets until office hours. At last:

"I'm Robert Fairchild," he said, as he faced a white-haired, Cupid-faced man in the rather dingy offices of the Princess Building. A slow smile spread over the pudgy features of the genial appearing attorney, and he waved a fat hand toward the office's extra chair.

"Sit down, son," came casually. "Needn't have announced yourself. I'd have known you—just like your father, boy. How is he?" Then his face suddenly sobered. "I'm afraid your presence is the answer. Am I right?" Fairchild nodded gravely. The old attorney slowly placed his fat hands together, peaking the fingers, and stared out of the window to the grimy roof and signboards of the next building.

"Perhaps it's better so," he said at last. "We hadn't seen each other in ten years—not since I went up to Indianapolis to have my last talk with him. Did he get any cherrier before—he went?"

"No."

"Just the same, huh? Always waiting?"

"Afraid of every step on the veranda, of every knock at the door."

Again the attorney stared out of the window.

"And you?"

"I?" Fairchild leaned forward in his chair. "I don't understand."

"Are you afraid?"

"Of what?"

The lawyer smiled.

"I don't know. Only—" and he leaned forward—"It's just as though I were living my younger days over this morning. It doesn't seem any time at all since your father was sitting just where you are now, and gad, boy, how much you look like he looked that morning? The same gray-blue, earnest eyes the same dark hair, the same strong shoulders, and good, manly chin, the same build—and look of determination about him. The call of adventure was in his blood, and he sat there all enthusiastic, telling me what he intended doing and asking my advice—although he wouldn't have followed it if I had given it. Back home was a baby and the woman he loved, and out west was sudden wealth, waiting for the right man to come along and find it. Gad!" White-haired old Beamish chuckled with the memory of it. "He almost made me throw over the law business that morning and go out adventuring with him! Then four years later," the tone changed suddenly, "he came back."

"What then?" Fairchild was on the edge of his chair. But Beamish only spread his hands.

"Truthfully, boy, I don't know. I have guessed—but I won't tell you what. All I know is that your father found what he was looking for and was on the point of achieving his every dream, when something happened. Then three men simply disappeared from the mining camp, announcing that they had failed and were going to hunt new diggings. That was all. One of them was your father—"

"But you said that he'd found—"

"Silver, running twenty ounces to the ton on an eight-inch vein which gave evidences of being only the beginning of a bonanza!"

(Continued next week).



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Champions
For Every Engine Everywhere



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Champion X . . . now 60c
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First price is low and two piece construction allows replacement of ribbed core with patented gaskets at half the price of a new plug

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Lalley Lighting Plants

I have on hand for disposal, stock of West Michigan Lalley Light Company. These are new, first class unused plants except as noted. All fully guaranteed in perfect condition, standard three months warranty as to workmanship and materials.

10 1250-watt plants new 5 1250-watt slightly used
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Prices \$75.00 up. Also some guaranteed second hand water systems at big savings. This is your chance—a fully guaranteed plant at a real saving. Terms to responsible parties. Write at once for complete information to

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450 Houseman Bldg.
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JUNE CHICKS

Hatched in Buckeye 7s, the machine with 3 BIG ELECTRIC FANS that blow fresh air through all the eggs for the whole 21 days. Result the nearest to a HEN HATCHED Chick a machine can produce. Lively, strong, fluffy chicks from standard bred, heavy laying hens. Twelve thousand chicks each week till July 1st. We specialize in BARRED PLYMOUTH ROCKS and R. I. REDS, at \$14.00 per 100. Also, in less numbers, WHITE WYANDOTTES, WHITE PLYMOUTH ROCKS, and BLACK MINORCAS at \$16.00. White and Brown Leghorns, \$12. Please name second choice if any. Add 50c for 1/4 and 1/2 hundreds. 100% live delivery guaranteed. Mailed, post paid.

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Larger hens, better winter layers. Free catalog describes them, tells a new way to cull hens, feeding methods, how to make a mash hopper that won't waste feed or clog, and other information.

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Barred Rock. Hatching eggs from Parks 200-egg B strain from stock direct from Parks best pedigreed pens. \$2 per 15, \$6 per 50, \$12 per 100. Prepaid by parcel post in non-breakable containers. No chicks for sale. **R. G. KIRBY,** Route 1, East Lansing, Mich.

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Barron's S. C. W. Leghorn and Sheppard's Ancona chicks for June delivery. Stock from trap nested stock with egg records from 200 up to 275. We prepay all shipments and guarantee safe delivery. Order now as our supply is limited. Write for catalogue. **Byron Center Poultry Farm,** Byron Center, Mich.

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from our S. C. English White Leghorns and Anconas. Records of 200 and up, at 12c each by prepaid parcels post, 100 per cent alive guaranteed. A chick well hatched is half raised.
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Put in your order for June chicks at 9c cents. And April hatched pullets. Bred from Heavy English Strain from our own free range poultry farm. 100% live delivery guaranteed.

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50,000 pullets for 1922 delivery. Because we raise on such a tremendous scale we can furnish pullets at extraordinary low prices. For heavy egg production get the Z. P. F. STRAIN. Pullets for sale every week. Catalog and price list free.

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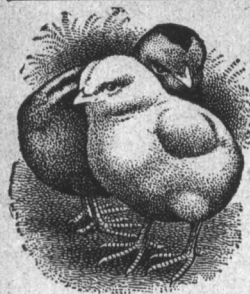
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chicks for 1922. POSTAGE PAID. 95% live arrival guarantee. MONTH'S FEED FREE with each order. A hatch EVERY week all year. 40 breeds chicks, 4 breeds ducklings, Select and Exhibition grades. Catalogue free, stamps appreciated. Nabob Hatcheries, Dept. 15, Gambier, Ohio

CHICKS, Have shipped thousands each season since 1904. Let us send our prepaid prices. Freeport Hatchery, Box 12, Freeport, Mich.

Useful Anconas Your success depends upon the strain. At Michigan's largest poultry show, (Grand Rapids) won 1st and 2nd cock, best shape male, 5th cockerel, 5th hen, 3rd pullet, 4th pen, utility and exhibition pens, every bird Hogan tested, eggs and chicks at hatchery prices with three times the quality. My 18 page booklet "Useful facts about Useful Anconas" tells you many things you ought to know before buying elsewhere. Michigan's Ancona Headquarters, College View Farm, R. 3, Hillsdale, Mich.

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Ask for our free catalogue and price list for May and June delivery.
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Day Old Chicks

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We have just the chicks you have been looking for, the large, strong, vigorous kind from free range flocks that have been culled for heavy egg production. Shipped prepaid parcel post. Safe arrival guaranteed. Ask about 8 wk. pullets. Catalog free. Gilt Edge Poultry Farm, Zeeland, Mich.

S. C. Black Minorca Hatching Eggs. Our choice strain, settings \$1.50; for 50 \$3.00; 100 \$5.00. C. J. DEEDRICK, Vassar, Mich.

Our Boys' and Girls' Department

The Value of Competition

The Story of a Boy Who Won, Lost and Won Again

By Johnny

PERHAPS one of the most coveted honors among club boys and girls is the county championship in his or her particular line. Then if the county championship has been won, the holder of such honors looks forward with hopeful anticipation of winning the state championship. If he or she has worked hard and everything came through all right and the state honor is won, it is a great deal of satisfaction to be the winner. But if you are the loser and only by the fraction of a margin, then often it is of more value to have lost. Because, as a rule, the harder you are thrown, the higher you'll rebound—just like a rubber ball,

as a certain person has put it. When you have been defeated but had expected to lose, it comes as a matter of fact, but to accept defeat when competition is keen makes you muster all the courage you have to smile and say, "I will."

Probably because of the popularity of the hog on the farm today, and of the larger number of pig clubs and the closer competition among them, the honor of winning with a pig is one of the highest of honors, and always attracts attention.

Among those starting club work last year on the same basis as many others, was Frank Pifer, of Charlotte.



Frank Pifer and the Pig that Won Him the State Championship.

Our Letter Box

THIS letter box will be where the boys and girls can express their views, tell of themselves and things about the farm, or ask advice. The most interesting letters each week will appear here. Address your letters to me.—Uncle Frank.

Dear Uncle Frank:

I am very busy with school work, work on the farm, and a hundred and one other things to do. After school lets out I will have a little more time and will then write more.

I have always enjoyed the Michigan Farmer, but with the contests it is doubly interesting. I wish we might have had an essay contest on "Mothers," or something pertaining to "Mother's Day," this last week, as I like the essay contests.

I am sending my list of answers to the questions for this week.—Ever your friend, Ford Chapman, Leslie, Mich.

I am sorry your suggestion did not come earlier. It is a good one. Am glad you like the essay contests. I do, too.

Dear Uncle Frank:

I am sending you the answers to the Read-and-Win Contest. I have tried before but have not won any prize. I hope I may succeed sometime.

I am a girl thirteen years old. I intend to go to Shelby high school next year in a new school house.

I live on a fruit farm and always enjoy picking fruit during the summer. I am taking lessons on the piano. I would like to be a music teacher and a domestic science teacher.

Our community is very wideawake. We have a literary society, grange and community circle. In these organizations we have helpful programs for farmers and women.

I go to church and Sunday School most every Sunday.

Our fruit trees are in blossom and everything looks beautiful here. I have many things to write about but must stop.—Your Pal, Carol L. Kerr, Shelby, Mich.

You are fortunate to live in the Oceana fruit section and in a wide-awake community. A live community helps much in the enjoyment of life. Let's hear from my Pal again.

Dear Uncle Frank:

I have been reading the letter box and think it very interesting. I like the Read-and-Win Contests the best, because I am not very good at writing essays. I live on a 160-acre farm three miles from town. I have never lived in the city, and don't think I want to.

If I could have my choice I would take the farm. I love to fish and hunt.

I am fifteen years old. I have caught about twenty trout since the first of May. There are not many fish in the creeks as they have been fished out. Our school is out the sixth of June and we are going to have a picnic. My sister and I have been catching rats. We have caught thirty-three this spring but last summer we caught about ninety.

I would love to receive a letter from Margaret Campbell.—Elsie Gill, Kalkaska, Mich.

Don't you think that because you may not be good at writing essays is the very reason why you should write them? Practice makes perfect, you know.

Dear Uncle Frank:

I like the Boys' and Girls' Department, and enjoy reading the letters. I live on a one hundred acre farm, thirteen miles from Detroit, and would enjoy having you visit us. We have three horses, ten cows, two calves, fifty baby chicks, fourteen baby pigs, and the mother, besides some shoats. I have a garden all my own and expect to sell all I raise. On the farm we raise grain, hay, potatoes, melons, sweet corn and garden truck for market. I rise at 5:30 a. m., help papa do the milking, take the cows to pasture, have breakfast, and when I have time, help mother some before school. Am in the fifth grade and like my school work. I am your nephew, Merle Headley.

Thanks for the invitation to visit you, but how about you coming to see me? I will show you how the Michigan Farmer is made if you do.

The club of which Frank became a member has a large membership and is one of the first to choose the Berkshire breed. This was his first year in the work, which shows that previous experience is not always necessary in order to be a winner.

Frank sent his pig to the state fair. His pig was not entered in the open class but was placed first in the club class and winning over the first and second prize winners in the open classes, which were owned by members from the same club as Frank.

He then had the very "delightful" experience of showing his pig at his local county fair against a pig owned by his sister, who is also a member of the club, and of being beaten by her. Most boys dislike being defeated by their own sister, but the true sportsman that Frank is, he took his defeat without a whimper, or either waited and let out his stored-up "enthusiasm" to sister when he could get her somewhere out of hearing. At any rate, this defeat evidently gave Frank a new courage for he "sailed in" and won the county championship. Now he has been awarded the state championship and a scholarship at the Michigan Agricultural College, which is given as a prize.

Besides the honors which have just been mentioned, Frank won first in his home county fair's judging contest, which prize was a free trip to the International Live Stock Exposition in Chicago.

Besides winning so many prizes the first year there has been the satisfaction of watching his pig develop out into prize-winning form under his own hand, the "pleasure" of being defeated by an own sister, the thrills of defeat and victory, and now, with the foundation laid for the raising of pure-bred swine, we can expect more prizes and honors in the future.

WHY I LIKE THE FARM.

By Mary Rennells, Marion, Mich.
Age Seventeen Years.

I like the farm for a number of reasons, but the reason foremost in my mind is the peacefulness and quietness which surrounds farm life. The quietness is like balm to a tired body or a sad heart. It seems to soothe and quiet the soul.

The next foremost reason, in my mind, is the healthfulness. How much better a person feels, when they get up with the sun and breathe the fresh morning air which causes the blood to rush through your system and you feel like a new person. What a contrast in getting up when the sun is four hours high, eating a hurried breakfast, going to an office, spending the day, then coming home tired and dull at night.

The farm is nature's school. It is here that nature holds her classes. She makes you acquainted with all of her children, the plants, animals, birds and insects.

It is on the farm that you learn to appreciate God's handwork, which often is essential to perfect happiness.

Last, but not least, is the independence and liberty enjoyed on the farm. Your neighbors are not always complaining about the chickens, or you running the lawn mower at five a. m. In fact, you are a king of your own farm or home.

These are the reasons why I like farm life. It embodies, health, peace, quietness, independence, liberty and appreciation of nature.

The Sport Results

By Uncle Frank

IN our sport contest, base ball was the sport that scored the heaviest. Twice as many picked it as their favorite sport than selected other forms of recreation. I was very glad to see that so many girls like base ball because, when played for the fun and exercise in it, it is a dandy game for both boys and girls.

Next to base ball, swimming was the most popular sport. In this there were about as many girls who liked the Old Swimmin' Hole as there were boys. Certainly during hot weather there is nothing more refreshing than a plunge in nature's bathtub.

Camping was about one-fourth as popular as base ball, and fishing ran camping a close race for third place. Many liked hiking, others preferred reading, and some liked work. Those who do consider work as a sport certainly are fortunate, because they are undoubtedly doing the kind of work they are adapted to, and therefore enjoy it. It is great when you can get joy out of your job.

The thought that has occurred to me is that all real sport is wholesome and upbuilding physically and mentally. And there is nothing better than to use the play spirit which is inherent in all of us in some good constructive play.

Here are the prize winners in this Sport Contest which appeared in our issue of May 20, and what they wrote:

By Muriel Young, Grand Rapids, Mich.

My favorite sport is swimming. It is a useful and enjoyable sport. There are three reasons why it is useful: First, in times of emergency; second, as a body builder, and third, as a recreation.

By Ruby Stables, Traverse City, Mich. Age Fifteen Years.

Of the many sports I enjoy, "camping and tramping" is my favorite. It affords many pleasures; brings one in contact with nature; makes one healthy, strong and vigorous; affords variety in education, and, best of all, inspires one to believe God created a world of which we may be proud.

By Elmer J. Smith, Battle Creek, Mich. Age Sixteen Years.

I think base ball is the best developing game and more scientific than any other. It teaches team work, competition, fairness, accuracy, alertness, coolness and efficiency.

To become a proficient base ball player requires years of consistent training. Base ball is typically American.

By Maurice L. Hartung, Levering, Mich. Age Eight Years.

The sport I like the best is picking wild flowers, because they are so pretty. They are messengers of spring. I love the lillies. They are so pure white. Mama says they are like God's angels. I like all flowers.

By Yanda. Sanborn, Morenci, Mich.

My favorite sport is reading. Reading not only entertains, but is teaching. I like great men's biographies, animal stories and traveling. Ancient history also appeals to me. There is some reading that has a bad effect upon people, but we must try to pick out the best, if we can.

The boys won out this time and it is rather natural they should, but I was very much pleased in the way the girls responded to this contest. In fact, I believe there were as many girls entered as there were boys.

There were many other young folks who gave interesting answers to this contest. For instance, Esther Kripes, of Erie, Michigan, gave the following on basket ball, which contains many good thoughts, but was disqualified because it was too long.

"Basket ball is the best of all games.

It gives one inspiration, also independence, and more self-reliance than I ever felt before I played it.

Other games have given me momentary pleasure, but basket ball makes me alert, and leaves me with a feeling of joy in life.

The game makes use of every muscle and part of the body. It has made me lots stronger and has given me a more healthy appearance.

The game of basket ball has certain rules regarding it, thus bringing members of teams into closer fellowship with each other. The rules also teach

Read and Win

FOR the coming week we are using another Read-and-Win Contest. The ten questions are below. Please answer them as concisely as possible and don't forget to mention the number of the page on which you found the answers. The five most correct and neatly arranged papers will bring their writers one dollar each. This contest closes on June 8. Please mail all your letters to Uncle Frank, Michigan Farmer, Detroit, Michigan.

1. How far apart should soy-beans be drilled for hay?
2. What spraying mixture followed the use of the Bordeaux mixture?
3. What effect does living amid broad pastures and caring for good live stock have upon men?
4. How may the danger of spontaneous combustion in mows and stacks be lessened?
5. How wide a range has a vacuum tube radio set?
6. When completed, where will the largest Masonic Temple be located?
7. What is good for slugs on roses?
8. Who is the great English woman preacher?
9. When cooking cabbage what will keep the odor of it from going through the house?
10. What is the keynote to successful handling of young pigs?

you to have a regard for opponents and for his rights as well as your own, thereby helping in a spiritual way.

Basket ball has been proven a good sport by above statements, for the definition of a sport is that it must be an improvement to mental, physical, and spiritual beings. It also gives pleasure."

Advance Notice Drawing Contest.

A great many boys and girls have expressed a desire for a drawing contest, so in our issue of June 10 we will announce one. I mention it at this time because some of the boys and girls who get their papers late may not have the time they wish to spend on the drawings before the contest closes. You may choose your subjects and your method of drawing. The contest will close June 15. The usual prizes will be given.

Boys and Girls Who Want to Correspond With Others.

Sophia M. Rutkowski, of Wallace, Michigan.
Alma Forester, Freeland, Michigan.
Elizabeth J. Carpenter, Springport, Michigan.
LaVinnie Ferrin, Davison, Michigan.
Mable Goodwin, Portland, Michigan.
Amelia Warczinsky, Minden City, Michigan.
Lucy Burt, Abbottsford, Michigan.
Clarice Evans, Romulus, Michigan.
Helen Frost, Howell, Michigan.
Rhea Taylor, Jenison, Michigan.
Elwood Foote, Holly, Michigan.
Lela Hagadone, Oxford, Michigan.
Wilbur Bigelow, Holly, Michigan.
Harvey Mills, Doster, Michigan.



Blood Will Tell

antee safe arrival and satisfaction, or your money back.

17,000 Chicks Every Week Till August 15th.

Prices for June and July 1922.

S. C. English type White Leghorns, are good and profitable layers, and our extra selected are of the very best layers.

It has never been our aim to put out cheap chicks, but to give our customers chicks that will be good layers and bring our customers a good profit.

We have been in the poultry business eleven years and are offering you chicks of the best layers at a very reasonable price.

	Per 25	Per 50	Per 100	Per 500	Per 1000
S.C.Eng.Type W.Leghorns,extra selected	\$3.00	\$6.00	\$12.00	\$57.50	\$115.00
S. C. English Type White Leghorns	2.50	5.00	10.00	50.00	100.00
S. C. Brown Leghorns, extra selected	3.00	6.00	12.00	57.50	115.00
S. C. Brown Leghorns, standard	2.50	5.00	10.00	50.00	100.00

We ship chicks by parcels post and pay the postage up to your door, and guarantee safe arrival. Our terms are cash with order, but we will book your order if you send one-fourth of the amount with the order, and the balance just before chicks are to be shipped.

Prompt Shipment

Order from this adv. to save time and we will write you at once when to look for the chicks and also will mail you our instructive catalogue, or write for catalogue before ordering.

The Wolverine Hatchery,

H. P. Wiersma, Proprietor,

Zeeland, Mich.



Baby Chicks

Ten Weeks Old Pullets

Best Laying Breeds on Earth

25,000 large strong super-hatched chicks every week from Hogan tested flocks culled out annually by our Poultry Experts.

Prices For June and July

	Per 50	Per 100	Per 500	Per 1000
S. C. White Leghorns				
English W. Leghorns	\$5.25	\$10.00	\$47.50	\$95.00
S. C. Brown Leghorns				
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Broilers (Odds & Ends)	\$4.00	\$7.50	\$35.00	

Extra Selected Stock at \$2.00 per 100 higher.

Thousands of Satisfied Customers Make Big Money

Mr. F. L. Hess, Chicago, Ill., writes: "I averaged 112 eggs a day from 140 of your pullets and sold \$138.00 worth of eggs in February."

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Intelligent chick buyers of today do not take chances with ordinary stock. Our enormous output enables us to sell these money makers at a price that positively cannot be equaled.

We Ship Thousands of Chicks Each Year

Every shipment is sent by PARCELS POST PREPAID, and we guarantee 100% live delivery. Order direct from ad. or send for illustrated catalogue.

Write for Prices on Pullets,

Wingarden Hatchery, Box M, Zeeland, Mich.

Pullets Cockerels Pullets

Chicks—Eggs—Breeding Stock—From Proven Layers

BARRED ROCKS ENGLISH WHITE LEGHORNS

ROCKS. Official Records 213 to 257 at M.A.C. In Dec. at Nat'l Laying Contest No. 4 Pullets averaged 24.5. I have won 5 specials so far at this contest, some records. WHITE LEGHORNS. Won cup best utility pen Zeeland [22 pens]. Mr. Foreman Judging. 1st and 2nd pens Holland Fair. 1st Hen West Mich. State Fair. Why take chances when you can buy stock of this kind at bargain prices. Special prices on May, June, July chicks. Write for catalogue.

G. CABALL, Box M, Hubsonville, Mich.

ANCONAS "Superior Quality"

Baby chicks and fertile eggs from M. A. C. selected 250 egg strain hens, mating list free. MANNINGS ANCONA FARM, Coldwater, Mich.

Barred Rocks S. C. Reds, W. Wyandottes, Bred-to-lay stock. Baby chicks, eggs, cockerels. Howard Grant, Marshall, Mich.

Buy Chicks Where Quality Counts.

All my flocks culled. You get chicks from nothing but best layers. Safe arrival guaranteed by prepaid parcel post. Ask about 8-week pullets. HERMAN J. COOK, 133 W. Main St., Zeeland, Mich.

Old Chicks, S. O. White Leghorns. They are from the big, thrifty, persistent producing stuff for which Macalwhite Poultry Yards are becoming noted. We know we can give you satisfaction. Send for our circular. Macalwhite Poultry Yards, Caro, Mich.

GUARANTEED CHICKS AND PULLETS' Low prices for pure-bred stock. Single Comb English Whites, Brown Leghorns and Anconas and Barred Rocks. Catalog free. Free Delivery. Fairview Hatchery, Zeeland, Mich. R. 2, John Bos & Son,

Barron White Leghorn pullets 10 weeks old \$1 each. Park's Strain Barred Rock pullets 10 weeks old \$1.10 each. Write for special prices on large lots. ROBT. CHRISTOPHER, R. 4, Holland, Mich.

Ext'a good chicks. Plan now on more eggs next winter. Order chicks from pure bred record layers. Tom Barron White Leghorns 100, \$12; Brown Leghorns, 100, \$12; Anconas, 100, \$13. Postpaid anywhere. Catalog free. Queen Hatchery, Zeeland, Mich.

BABY CHICKS 1922 delivery now ready. White Leghorns, White Rocks, Buff Orpington, Buff Rocks, Barred Rocks, R. I. Reds, Black Minorcas, S. C. Anconas. Guaranteed pure bred and live arrival. Postage paid DURAND HATCHERY, Fenton, Mich.

PERFECT DUCKLINGS EGGS AND DRAKES Price List Free, Box T. Pardee's, Islip, L. I. N. Y.

Mam. Bronze Turkeys, hens 8 lb. \$6.00, Toms 10 lb. \$8.00. Eggs \$6.00 per 10. Prepaid this mo. Ralph Wise Nurseries, Box 151, Plainwell, Mich.

Additional Poultry Ads. on Page 678

POULTRY

S. C. W. Leghorns Our Specialty

Get the BIG PROFITS, with

Baby Chicks

That Are PURE BRED

Place with us AT ONCE, your order for Baby Chicks. Our supply is limited and we refuse to sell anything but our OWN STOCK, so we advise to not delay. Buy from Michigan's largest practical Single Comb White Leghorn Egg, Pullet and Broiler Farm. We supply every egg that goes into our incubators from our own strain of BRED TO LAY UTILITY S. C. White Leghorns and have a few thousand surplus chicks to spare at certain periods of the season. We GUARANTEE each customer ABSOLUTE SATISFACTION. Drop us a card TODAY for interesting PRICES, before placing your order elsewhere. Chicks delivered at your door by Parcel Post Free. 100% ALIVE.

Sample of many testimonials that show, JUNE CHIX MAKE BIG PROFITS

Niles, Mich., Feb. 14, 1922
Simon Harkema and Sons,
Holland, Mich.

Dear Sirs:
The 7th of June last year we bought 600 chix from you and had splendid success with them. Raised 550, have 100 that have not been culled, began laying Nov. 15 and are now laying from 60 to 70 eggs per day. 1 cockerel and 2 pullets took 1st and 3rd prizes at our poultry show here at Niles, etc.
Mrs. Mark Feigmer,
Niles, Mich.

SIMON HARKEMA & SONS,
Holland, Mich.



BABY CHICKS

Eight leading Standard Varieties. Every chick from pure bred, healthy, carefully selected stock. We are not jobbers. We personally know what we are selling. Delivered at your door, parcel post prepaid 100% live delivery guaranteed. Catalogue free.

MUNCIE BABY CHICK CO.
Lock Box 274, Muncie, Indiana

BABY CHICKS
BOOKLET GUARANTEED
Postage Paid. Live arrival guaranteed. Write TODAY for valuable FREE Booklet. "How to Raise 30% of Your Chicks" also interesting Catalogue, describing convincingly, WHY you should purchase our "Better Hatched" Chicks. Co-Operative Breeding and Hatching Co., Box H, TIRO, OHIO.

DAY OLD CHICKS

White Leghorns \$12 per 100; \$6.50 for 50; and \$3.75 for 25. Barred and White Rocks, White Wyandottes and Rhode Island Reds \$17 for 100; \$9.00 for 50; and \$4.75 for 25. Order from this ad, terms cash with order. Custom hatching 5c per egg, hatchery capacity 9600. Hatchery 4 miles east of Mt. Morris on Mt. Morris road one mile north and one east. Valley Phone No. 14-5. ROSS WADE, Prop. Meadow Brook Hatchery, Mt. Morris, Mich.

Free ROYCROFT Book B-A-B-Y C-H-I-X

WHITE LEGHORNS AND MOTTLED ANCONAS Also Black Leghorns, Brown Leghorns, Buff Leghorns, Black Minorcas, R. O. Rhode Island Reds, Barred Plymouth Rocks, White Plymouth Rocks, Silver Wyandottes, White Wyandottes. WE HATCH eggs from Hogenized flocks on free range on separate farms. Send for Price List.

Valuable Booklet with first order for twenty-five or more
CRESCENT EGG COMPANY
Allegan, Michigan

BABY CHIX

May & June delivery prices. Barred Plymouth Rocks, White Rocks, R. I. Reds, Black Minorcas, White Leghorns or Anconas, 25 for \$5.50; 50 for \$10.00 or 100 for \$16.00 prepaid, 100% live delivery guaranteed. Our 12th year producing chick that please. July price 2c less per chick. Green Lawn Poultry Farm, R. 3, Fenton, Mich.

Snowy White Rocks Fishel Strain, dandy layers. Eggs \$1.50-15; \$3.75-50; \$7.00-100. All prepaid. Mrs. Earl Dehnhoff, Vanburen, Ohio.

SINGLE COMB BUFF LEGHORN
baby chicks. Willard Webster, R. 2, Bath, Mich

WHITTAKER'S RED CHICKS

and Eggs for Hatching. Both Combs. Blood tested for white diarrhoea. Michigan's Greatest Color and Egg Strain. Write for Free Catalogue.
INTERLAKES FARM, Box 39, Lawrence, Mich.

Baby Chicks \$12.00 per 100 and up
Hatching eggs, \$1.50 per setting to \$15.00 per 100. We are listing 17 varieties of pure bred fowls; Chickens, Geese, Ducks & Guinea, also breeding stock. Send for prices and circular. Booking now for early delivery. **CLINTON HATCHERY & POULTRY FARMS,** Wilmington, Ohio.

Baby Chicks and Hatching Eggs from trap-nested, pedigree stock. Park's strain Barred Rocks. Heavy laying strain Rhode Island Reds. English White Leghorns. Quality, not quantity. Prices reasonable. Write us. **Lakeview Poultry Farm,** Box 3, R. 8, Holland, Mich.

Bred-to-Lay White Wyandottes
50 hens laid 1170 eggs in Jan. Eggs \$2.00 per 15; \$3.00 per 100. **EVERGREEN POULTRY FARM,** Blanding & Sons, Greenville, Mich.

DAY OLD CHICKS

S. C. English strain White Leghorns, Brown Leghorns, Anconas and Barred Rocks, free and safe delivery guaranteed. **O. BOVEN,** R. 12, Holland, Mich.

Farm Poultry

JUNE POULTRY SUGGESTIONS.

WE like colony houses on skids. The skids can each be made of two large planks nailed together with the end beveled like a sled. A large hole can be bored in the end of each skid to hold a rope or chain. The floor is built directly on the skids. Notches are made that will hold two-by-four pieces and then the floor boards can be nailed down. The sled-like foundation for the building gives it strength. The floor is raised high enough from the ground to keep out rats. The building can be easily moved when fresh soil seems necessary for the young growing stock.

It is not necessary to have colony houses unpainted and scrappy looking. Even a roughly built small building can be greatly improved by painting the corners white and the remainder a barn red. The paint saves the lumber and increases the life of the equipment. It pays to remember that poultry equipment costs money to replace and when we protect the surface with paint we help save the building.

Sometimes a large poultry house on a concrete foundation will have a space between the sills and the cement where the wind can blow through. This makes a draught across the floor. Be sure that the foundation is tight and it will help prevent colds. In building a poultry house it pays to set large iron bolts in the cement foundation and then bolt the sills down. This makes you feel easier when severe wind storms sweep over the farm.

Several poultrymen in our section have tried giving tomato juice to the brooder house chicks as an insurance against leg weakness. It is recommended by the Michigan Experiment Station and has proven useful, especially in bad weather when the chicks have to be confined. A few extra cans of tomatoes will be stored up this summer for use with our young flocks next spring.

In planting the garden it pays to remember the needs of your next season's chicks. I find that they relish onions, beets and mangels when confined in the brooder house and this succulent feed is of great value in keeping chicks healthy.

In some cases where chicks have had digestive trouble, a few feeds of boiled rice has been useful in improving their condition. A drop of castor oil with a medicine dropper will often brace up a chick that has started to paste up. The chicks must be studied and treatments given promptly. Nearly all chick troubles are easier to prevent than to cure. No hurried treatment can quickly make up for a week of neglect.

We give brooder chicks a fountain of water as well as one of sour milk, although some poultrymen recommend only sour milk for the first two or three weeks. I find that the brooder chicks become very thirsty during the hot weather and they seem more contented when they can drink both the water and the milk. We often mix our supply of sour milk with equal parts of water. Then it does not clog the feeders so readily and it seems more efficient in quenching the thirst of the young chicks.

SETTING HENS HAVE LICE.

I have lost three setting hens by red mites and all the chickens have lice. I have dipped them and used a lice powder without results; have also sprayed the coop. Do you know of anything that would take care of this trouble, which would be harmless to

hatching eggs when applied to the chickens?—Mrs. C. A. D.

We have found blue ointment very satisfactory for protecting the setting hens from lice, and it has not injured the eggs. The blue ointment is thoroughly mixed with equal parts of low-grade vaseline. Then rub a small bit of the ointment under each wing and under the vent. It should be rubbed in thoroughly so it will not come off on the eggs or be pecked off by the hens. This treatment for lice is usually good for six months and is more quickly applied than powders or dips. The blue ointment is poisonous and should be placed on the highest shelf.

We spray with the commercial coal tar disinfectants for red mites. Spray the nesting box thoroughly before making up the nest for a setting hen, and mites will seldom cause trouble. For red mites on hen roosts you can use kerosene oil or the old engine oil drained from an automobile crank case. Paint the roosts on all sides and soak up any cracks and crevices near the roosts which may harbor the mites.

TURKEY WITH WEAK LEGS.

Please tell me what ails my turkey. She seems to lose the use of her legs and is weak in back also. Her legs and hips tremble. She seems in good health otherwise; has laid twelve eggs and is now wanting to set. When she sets for a time she is worse and can hardly walk.—J. B.

Leg weakness is a trouble for which there is no remedy. Sometimes a bird recovers without treatment. At other times the weakness increases until the bird has to be killed. Sometimes trouble with the legs might be due to rheumatism. In such cases the bird is apt to recover when the weather conditions are good.

A turkey that is laying is apt to be in fairly good health. Possibly the weakness in the back and legs is due to some physical injury, like a kick from some farm animal.

ANIMAL FOOD FOR GROWING CHICKS.

NO part of the ration for growing chicks is of greater importance than that of animal food. There are sources of supply of this on the farm not to be had where chicks are confined to pens and small runs. Aside from the insect life to be gathered by the busy brood on a free range, there are earth worms to be had in abundance during spring and early summer. It seems to me that there is no form of animal life that will set a brood of young chicks quite so crazy as these same earth worms snatched fresh from the earth. The brood soon learn to know what is coming when one steps over into their run with a fork. Such a scrambling as takes place when a dozen or so wriggling creatures are thrown up! The zest with which the chickens yank at the free end of a worm protruding from a chunk of earth is sure a pleasing sight.

In supplying animal food for chicks in this way it is necessary to be careful that no chicks are covered with the forkful of earth as it is dropped from the tines. Indeed, chicks thus excited so get in the way that there is scarcely room to shove the fork tines into the soil. It is sure great sport.

Quail, the farmer's best bird friend, eat chinch bugs, potato beetles, striped cucumber beetles, wireworms, cutworms, army worms, grasshoppers, clover weevils, and 108 other sorts of insects.

DAY OLD CHICKS
HOMESTEAD FARMS
Michigan people: Here is something in your own state to interest you. Let us send you a description of our
Pure Bred Practical Poultry
Here is an egg producing poultry stock such as the farmer poultry-woman wants. It is proving out in actual eggs in the hands of the farmer poultry people who buy it.

White, Brown and Buff Leghorns; Anconas; Black Minorcas; Barred, Buff and White Rocks; Rhode Island Reds; Wyandottes; Orpingtons.

This stock is culled and bred on the plan of the state Agricultural College, and all the Hens in the Breeding Colonies are practical egg-producing Hens.

If you will send for a description and egg record of this Pure Bred Practical Poultry, you will find stock that it will pay you to buy. Buy Day Old Chicks this year and see the results you will get.

EIGHT WEEKS OLD PULLETS
We shall have 5000 Eight-weeks and Three-months Pullets to sell in May, June and July in all our breeds. Orders can be placed now for these Pullets. We will send you description and Price List.

STATE FARMS ASSOCIATION
Box A47, Kalamazoo, Mich.

CHICKS
From Michigan's Old Reliable Hatchery. American and English White Leghorns, Anconas, Barred Plymouth Rocks and R. I. Reds. Strong sturdy chicks from Grand bred to lay, Hogenized, free range breeders. Sent by Insured Parcel Post, prepaid. 100% live delivery at your door. Guarantees satisfaction, or your money back. 15,000 each week, 14th season. Get my low price and valuable illustrated 1922 free catalog and place your May and June orders where you get best quality at lowest prices.
W. Van Apple, R. 7, Holland, Mich.

100,000 Reliable Chicks for 1922
Of quality, real value for your money. Anconas, Brown Leghorns, American and English White Leghorn strains, with the long deep-bodied loop-combed kind that lay the large white eggs, from Hogenized selected flocks. Post paid to your door at reduced prices. Get our information and price list free before you buy elsewhere.
PAUL DE GROOT, Prop.
Reliable Poultry Farm & Hatchery,
Zeeland, Mich., R. R. No. 1

OVIE'S BABY CHICKS
Makes Producers!
For years we have been building up utility heavy laying strains of exhibition quality so our customers will be assured of success. 12 leading breeds. 10c each and up. 5c live arrival guaranteed by P. P. Prepaid. Catalogue free.
Ovie's Poultry Farm & Hatchery,
32 State St., Marion, Indiana

CHICKS
Twelve most popular varieties. Hatched from flocks which have been bred for quality and culled for heavy egg production. 100 percent live delivery guaranteed by parcel post prepaid.
Mankel Ideal Hatchery,
Box B, Upper Sandusky, Ohio

200,000 Baby Chicks
FOR 1922
Shepard's Anconas, English Type White Leghorns and Brown Leghorns and Barred Rocks. Why pay two prices when you can buy direct? Our chicks are from strong, vigorous flocks of fine quality and excellent layers. Chicks are shipped prepaid with 100% live arrival guaranteed. Order now, catalogue free.
R. 12, KNOLL HATCHERY,
Holland, Mich.

BABY CHICKS White and Buff Leghorns, Barred Plymouth Rocks, Buff Plymouth Rocks, White Plymouth Rocks, Rhode Island Reds and White Wyandottes, 25 for \$3.25, 50 for \$10.00, 100 for \$18.00.
FENTON CHICKEN HATCHERY, Box 244, Fenton, Michigan

EGG BRED CHICKS, from high producing stock, 19 years experience in hatching and breeding White Leghorns, Barred Rocks and Anconas. Circular. Frank Heins, Box 6, Comstock Park, Mich.

CHICKS—BRED-TO-LAY
S. C. W. Leghorns, S. C. Anconas and Barred Rocks. Quality chicks that please, guaranteed full count, 100% alive on arrival, parcels post paid. Circular.
SUNNYBROOK POULTRY FARM, Hillsdale, Mich

HA! HA! { 75,000 } CHICKS
Buy Hi-grade Profit Paying Bred-to-Lay Chix. From tested egg strain. Best foundation stock ever produced. Hatching eggs, duckings, 10 varieties. Cir. stamps appre. **Laurence Poultry Farm,** R. 7, Grand Rapids, Mich.

S. C. Black Minorca Eggs No. 1 pen \$3.00 per setting. From No. 2 pen \$2.00 per setting. **R. W. MILLS,** Saline, Mich.

TEN EGGS for hatching from pure Toulouse Goose, four dollars and fifty cts. (\$4.50), insured parcel post paid.
MRS. AMY SOUTHWORTH, Allen, Mich.

W. Chinese goose eggs 40c each, Pekin duck \$1.50 for 8. R. C. Br. Leghorn \$1.50 for 15 \$3.00 per 100. **Mrs. Claudia Betts,** Hillsdale, Mich.

SINGLE COMB WHITE LEGHORNS
baby chicks and hatching eggs from our flock of high producing hens raised on free range. Write for circular. **RALPH S. TOTEN,** Pittsford, Mich.

Hatching Eggs \$5 per 100, \$3 per 45, \$1.25 per 15 prepaid. R. I. Reds, White Wyandottes, W. Rocks, Barred Rocks, W. Leghorns. Healthy heavy layers, farm raised. Please order from ad. Satisfaction. **GORET BROS.,** Corunna, Mich.

S. C. Brown Leghorns. Eggs, Lt. 15-51; 30-51.60; 50-52.50; 100-54.75. Dark 15-51.75; 30-53. Eng. W. Leghorns, (288 ped. males) 15-51.75; 30-53; 50-54. P. P. guaranteed. **Healthy heavy layers, farm raised. Please order from ad. Satisfaction. GORET BROS.,** Corunna, Mich.

White Diarrhea

Remarkable Experience of Mrs. C.M. Bradshaw in Preventing White Diarrhea

The following letter will no doubt be of utmost interest to poultry raisers who have had serious losses from White Diarrhea. We will let Mrs. Bradshaw tell of her experience in her own words:

"Gentlemen: I see reports of so many losing their little chicks with White Diarrhea, so thought I would tell my experience. I used to lose a great many from this cause, tried many remedies and was about discouraged. As a last resort I sent to the Walker Remedy Co., Dept. 507, Waterloo, Iowa, for their Walko White Diarrhea Remedy. I used two 50c packages, raised 300 White Wyandottes and never lost one or had one sick after giving the medicine, and my chickens are larger and healthier than ever before. I have found this company thoroughly reliable and always get the remedy by return mail.—Mrs. C. M. Bradshaw, Beaconsfield, Iowa."

Cause of White Diarrhea

White Diarrhea is caused by the Bacillus Bacterium Pullorum. This germ is transmitted to the baby chick through the yolk of the newly hatched egg. Readers are warned to beware of White Diarrhea. Don't wait until it kills half your chicks. Take the "stitch in time that saves nine." Remember, there is scarcely a hatch without some infected chicks. Don't let these few infect your entire flock. Prevent it. Give Walko in all drinking water for the first two weeks and you won't lose one chick where you lost hundreds before. These letters prove it:

Never Lost a Single Chick

Mrs. L. L. Tam, Burnetts Creek, Ind., writes: "I have lost my share of chicks from White Diarrhea. Finally I sent for two packages of Walko. I raised over 500 chicks and I never lost a single chick from White Diarrhea. Walko not only prevents White Diarrhea, but it gives the chicks strength and vigor; they develop quicker and feather earlier."

Never Lost One After First Dose

Mrs. Ethel Rhoades, Shenandoah, Iowa, writes: "My first incubator chicks, when but a few days old, began to die by the dozens with White Diarrhea. I tried different remedies and was about discouraged with the chicken business. Finally I sent to the Walker Remedy Co., Waterloo, Iowa, for a box of their Walko White Diarrhea Remedy. It's just the only thing for this terrible disease. We raised 700 thrifty, healthy chicks and never lost a single chick after the first dose."

You Run No Risk

We will send Walko White Diarrhea Remedy entirely at our risk—postage prepaid—so you can see for yourself what a wonder-working remedy it is for White Diarrhea in baby chicks. So you can prove—as thousands have proven—that it will stop your losses and double, treble, even quadruple your profits. Send 50c for package of Walko—give it in all drinking water for the first two weeks and watch results. You'll find you won't lose one chick where you lost hundreds before. It's a positive fact. We guarantee it. The Leavitt & Johnson National Bank, the oldest and strongest bank in Waterloo, Iowa, stands back of this guarantee. You run no risk. If you don't find it the greatest little chick saver you ever used, your money will be instantly refunded.

WALKER REMEDY CO., Dept. 507, Waterloo, Iowa.

Send me the [] 50c regular size (or [] \$1 economical large size) package of Walko White Diarrhea Remedy to try at your risk. Send it on your positive guarantee to instantly refund my money if not satisfied in every way. I am enclosing 50c (or \$1.00). (P. O. money order, check or currency acceptable.)

Name

Town

State R. F. D.

Mark (X) in square indicating size package wanted. Large package contains nearly three times as much as small. No war tax.

SETTING HENS EAT EGGS.

We have a number of hens setting and some of them eat their eggs. What is the cause of this and what can we do to stop it? The ducks are fed skim-milk and corn at the nest, they receive nothing else. Would it do any good to let them have oyster shells?—S. H. M.

It is very unusual for setting hens to eat their eggs and the habit may have started because the nests are too deep and the eggs are broken by the hens jumping down upon them. The remedy would be to make the nests rather shallow so the hen can step in on the eggs. The hen that steals her nest in the hay or the fence corner makes only a very shallow nest and the eggs in such nests are seldom broken.

Hens that are not laying do not usually crave much shell-making material but it might be best to furnish your setting hens with shell and all the other items in the ration that laying hens need. This helps the broody hens to keep their bodies in good condition during the strain of setting. If the nests are darkened it may help to prevent the egg eating.

BLUE OINTMENT FOR LICE.

Please tell me what we can do for hen lice.—G. B.

Blue ointment mixed half and half with low-grade vaseline is a sure treatment for lice and will protect the hens for about six months. Place a small dab under each wing and under the vent and rub the ointment in thoroughly. To keep lice and mites out of a new henhouse the commercial coal-tar disinfectants are very useful. You can keep mites away from hen roosts by painting the roosts every few weeks with kerosene.

If the nests are protected from mites and lice, with an occasional spraying and the roosts are also sprayed, there is little danger from these pests in the remainder of the house. If blue ointment keeps the hens free from lice there will be few, if any, lice around the poultry house.

SOFT-SHELLED EGGS.

Please give me advice on hens that drop soft-shelled eggs. Mine are White Leghorns. I keep before them oyster shell, charcoal and dry mash all the time and plenty of sweet milk from the cream separator; they have free range. I have eighty hens and they have laid well all winter, but now I find several soft eggs every morning under the roost.—E. G. F.

Hens do not usually lay soft-shelled eggs when they are in good condition and have plenty of oyster shells. Sometimes a hen that is overfat will lay soft-shelled eggs occasionally. In a large flock of well-managed hens that are laying heavily an occasional soft-shelled egg might be found, due to conditions in a few of the birds over which the poultryman would have little control.

A few such losses may be unavoidable and if the hens have a balanced ration, plenty of oyster shell, and are not overfat the loss from soft-shelled eggs will be very small.

CHICKS WITH WEAK LEGS.

I have baby chicks that were hatched in March, that have trouble with their legs. They are well otherwise, but they cannot stand up. They are fed rolled oats and ground corn and wheat. Also sour milk and sometimes cottage cheese.—Mrs. S. L.

Leg weakness is often caused by the early chicks spending too much time on the warm and dry brooder house floor. It seldom causes much trouble after the chicks are outdoors. Tomato juice has recently been used with success in preventing leg weakness.

We have been successful in preventing leg weakness among early chicks by cutting a few fresh sods for each brooder house nearly every day.

Ancona Baby Chicks

The S. C. Anconas have proved to be the most valuable fowl for the farmer today. We have the Bred-To-Lay Sheppard Strain, and are offering these chicks at extremely low prices, let us have your order and prove to you the wonderful laying ability of our birds.



For those who prefer S. C. White Leghorns we have some of the very best stock obtainable. Get some of our chicks and you will be on the road to success. We pay all Parcel Post charges and guarantee chicks to reach you in first-class condition.

Prices of selected chicks for May.

	per 50	per 100	per 500	per 1000
S. C. Anconas	\$7.00	\$13.00	\$62.50	\$120.00
S. C. White Leg.	\$6.50	\$12.00	\$57.50	\$110.00

Order direct from adv. Prompt shipment. Satisfaction guaranteed.

M. D. Wyngarden, R. 4, Zeeland, Michigan

CHICKS-PULLETS

Baby Chicks for June Delivery

Free Range Vigorous Healthy Stock.



8 Weeks Pullets at Bargain Prices

Send in your order NOW.

Tom Barron English White Leghorns Brown Leghorns—Anconas

Live Arrival and Complete Satisfaction Guaranteed

—WE SAVE YOU MONEY—

Send For Free Bargain List Today

Superior Poultry Farms & Hatchery, Box 2053, Zeeland, Mich.

Royal Chix



Guaranteed to Satisfy

Reduced Prices for June Delivery English Type White Leghorn Brown Leghorns

Get your order in at once for these dates as they will soon be sold at this price. Our chicks are from heavy laying selected breeders, with large combs and deep bodies. Our chicks are hatched right and will live. Safe arrival guaranteed. Order direct or send for our illustrated catalog.

ROYAL HATCHERY, R 2, ZEELAND, MICHIGAN

BUY HUBER'S



RELIABLE CHICKS

Special Summer Prices

By Parcel Post Prepaid. Guarantee Live Delivery.

Don't fail to take advantage of these prices for they will include our Number One Grade Chicks. Our stock is bred for Quality and Heavy Egg Production. Will ship any number of chicks from 25 on up. Our 13th Year.

S. C. White and Brown Leghorns and Odds and Ends at 10 cts. S. C. Anconas at 12 cts. R. C. and S. C. Reds and Barred Rocks at 13 cts. S. C. Buff Orpingtons, S. C. Black Minorcas and White Wyandottes at 15 cts. S. C. Buff Minorcas at 20 cts.

30,000 chicks every week. Order direct from this advertisement.

Attractive Catalogue Free.

Huber's Reliable Hatchery, East High St., Fostoria, Ohio.



Baby Chicks Pure Bred for 1922

LOOK AND LISTEN WHAT WE SAY AS TO PRICE FOR JUNE & JULY

Bred To Lay and they do it. Buy them, try them and be convinced. Quality means Success. To your door prepaid parcel post. Live delivery guaranteed. Order from this Ad. and save delay in your order. No order for less than 25 chicks.

S. C. White Leghorns, S. C. Brown Leg., S. C. Buff Leg.	10c Each
Barred Rocks, S. C. R. 1. Reds, Anconas	13c "
White Rocks, W. Wyandottes, B. Minorcas, R. C. R. 1. Reds	15c "
White & Buff Orpingtons	16c "
Odds & Ends Broiler Chicks	10c "

Catalogue Free for the Asking

Wolf Hatching & Breeding Co., Gibsonburg, Ohio

HATCHING EGGS

CERTIFIED S. C. W. LEGHORNS

15c Each. One or 1000. Book your orders NOW for these great eggs. For Mar. April and May delivery. Satisfaction Guaranteed. NORMAN T. MAXON, Edgewood Farm, R. 3, Flint, Mich. BABY CHICKS, Double Egg Price.

Sick Baby Chicks? GERMOZONE is a positive remedy for roup, colds, bowel trouble and such costly ailments. Preventive as well as curative. A wonder worker for poultry. On market over 20 years. Endorsed by many thousand users. Don't lose your baby chicks. Get GERMOZONE TODAY. At drug and seed stores. If no dealer, order by card. 75c and \$1.50 sizes. Postman will collect. No extra charge. GEO. H. LEE CO., Dept. F39 Omaha, Neb.

BABY CHICKS All popular varieties from selected flocks. Reasonable prices. LITCHFIELD HATCHERY, Litchfield, Mich., J. H. Adams, Owner.



To the Careful, Intelligent Buyer

FIND the MULEHIDE dealer in your town and trust him.

He believes in quality rather than price.

Your trade relations with him will be both pleasant and profitable.

"Not a Kick in a Million Feet"

LEHON COMPANY of CHICAGO

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Dairy Farming

Does T. B. Testing Pay?

By C. L. Bolander

IT is unfortunate that so many good dairy farmers do not realize the value of T. B. eradication. This possibly is much more common among farmers who just keep cows because they think that they need them.

In my extension work, I have heard farmers remark that they couldn't dispose of any cows, even if they knew they were boarders, because they had to have all the stanchions filled to keep the barn comfortably warm; and that they needed so much manure each year.

Fortunately Michigan has a number of counties that are opening the way to a successful T. B. eradication campaign.

Livingston county, Michigan, a county which has more Holstein cattle and leads with the number of pure-bred Holsteins, can now boast of this one feat. This county has in the last fifteen months tested 34,288 head of cattle and has the remarkable report on this test to show that only 1.41 per cent of this large number reacted. Livingston county, with this low percentage, leads all other counties in the United States. By all indications, before the books for this year are closed, Livingston county can proudly say that every cow in the county has been tested. There is possibly nothing that will

ruin a farmer more quickly, from a financial standpoint, than to have a number of his best cows react to the T. B. test. As in all other things, it usually happens to the animals he prizes the most, so besides being a financial loss, it is a big help to set him on the road to discouragement.

There is probably no disease that is affected more than tuberculosis when a general clean-up campaign is conducted. Its importance is more noticeable than any other disease, possibly because the whole product of the bovine animal is used for human consumption, whether it be consumed in the way of milk, butter, cheese or meat. The seriousness of this disease and its root of evil is perhaps not fully realized until we stop and think that about ninety per cent of the people in this country are using this product in some way or other every day and a large percentage of the public depend on this for the major part of their maintenance. What folly it is for the public to be seeking and prescribing cures, if we don't first get to the root of the evil and establish a preventative.

Much credit is due agricultural institutions for the efforts they are putting forth, in spite of all their obstacles.

Holsteins Sell Well at Howell

By Our Live Stock Reporter

THE state of Michigan is rapidly becoming noted for the splendid quality and rugged thriftiness of its dairy cattle; buyers, from eastern seaboard districts have been coming to Michigan every year, of late, in increasing numbers to purchase our Holsteins because testing operations, for tuberculosis, have developed a smaller percentage of reactors than in any other state in the Union. The Holstein breeders of Livingston county have probably done more than those of any other county in helping to win for Michigan its present enviable reputation as a dairy state; in the district immediately surrounding Howell are located many of the herds that have helped to make Livingston famous. The McPhersons deserve a large share of the credit for the popularity which the city of Howell enjoys as a leading Holstein-breeding center; so firmly established has been the reputation of Livingston county, as a producer of heavy-milking Holsteins, that hundreds of carloads of grade and pure-bred dairy cows are purchased there every year for shipment to eastern points.

In the recent past many important auction sales of pure-bred Holstein cattle have been held in the sale pavilion, on the fair grounds at Howell; the foundations for many herds in Michigan and adjoining states have been laid with cattle purchased at the sales referred to, but it is probable that the offering which went through the sale ring on Saturday, May 20, during the R. B. McPherson consignment sale, averaged higher in quality than any band of cattle ever sold at this point. The first fifty head sold, averaged \$223, a splendid showing when the history of recent auction sales of Holsteins is taken into consideration. The cattle came into the ring in splendid condition and without a sin-

gle exception, in the seventy-four head that were sold, they exhibited the quiet tractable disposition so highly prized by breeders of dairy cattle. The auctioneer was J. E. Mack and the pedigree work was done by S. T. Wood; these two men have a reputation for working well together but on this occasion they outdid all previous records in teamwork, selling cattle. The sale pavilion was filled to capacity and, mixed with the crowd, were many prompt and persistent bidders. Several breeders of note from a distance were present, including D. D. Aitken and M. H. Piper, of Flint; R. N. Johnson, Allenton, New Jersey; John M. Dennis, Riderwood, Maryland, and H. C. Hoover, Toledo, Ohio.

The highest priced cow in the offering was bought by Musolf Brothers, of South Lyons, for \$660; the same firm bought another cow for \$550 and one for \$405. All of the above animals were consigned by R. B. McPherson. Dutchland Konigen Sir Rag Apple, the bull which has been at the head of the R. B. McPherson herd for the last three years, sold in his four-year-old form at this sale for \$415. Mr. McPherson paid \$2,000 for this bull when he was a calf and his only reason for selling him was because he is related to his large herd of young heifers. C. W. Gordon, Fowlerville, was the lucky buyer of this wonderful sire. An under-yearling bull of great merit was purchased by M. H. Piper, of Flint, for \$400.

The consignors were: R. B. and M. J. McPherson, Musolf Brothers, C. S. Heeg & Son, Burr Hoover, W. J. Ireland and J. B. Tooley. The names and addresses of the buyers of cattle are as follows: John S. Chestnut, Fenton; C. Weber, Brighton; F. J. Fishbeck, Howell; C. A. Rinceman, Gregory; M. H. Piper, Flint; W. E. Fellows, Flint; E. A. Swann, Howell; John G. Lewis,

Detroit; E. S. Spalding & Son, Chelsea; John M. Dennis, Ridgewood, Md.; E. A. Hardy, Rochester; H. C. Hansen, Lansing; Detroit Creamery Company, Mt. Clemens; W. L. Meyer, Fowlerville; W. Griffin, Howell; E. H. Worvie, Salem; E. B. Clark, Grand Blanc; P. F. Crandall, Howell; Yates Hunt, Fenton; W. C. Hoover, West Toledo, Ohio; M. Van Vorce, Ann Arbor; J. L.

Teigler, Dexter; H. O. Lester, Oshtemo; C. W. Gordon, Fowlerville; J. H. Comer, Webberville; Musolf Brothers, South Lyons; H. B. Clark, Northville; Harvey S. Davis, Willis; J. M. Williams, Howell; G. V. Cook & Son, Fowlerville; C. F. Rudolph, Fowlerville; Orla Jacobs, Gregory; V. N. Johnson, Allenton, N. J.; C. C. Olson, Fowlerville.

Water for Dairy Cows

WATER is the largest portion of the ration of the dairy cow. Its supply is just as essential as any other part of the ration. It has been found that the dairy cow herself analyses practically sixty per cent water, and her milk contains about eighty-seven per cent. It is therefore, of first importance to the health and economic production of the dairy cow that the water supply be considered an essential part of the dairy equipment.

During the summer months the dairy cow requires a large amount of water to keep her cool and comfortable, to promote digestion and produce a large milk yield. An inadequate supply of water even though the ration may contain all the essential ingredients will curtail production. While pasture, especially during the early summer months contains a large amount of water, it does not contain near enough to meet the requirements of the dairy cow.

A few farms have the advantage of natural water supply, either from continuous flowing springs, small creeks or rivers. This is a priceless asset to the dairy equipment. The farm that does not have the advantage of natural water for live stock purposes must supply it from a well. This can be adequately arranged without a very large outlay of capital. On my farm I have a small river running through my permanent pasture. I also have a water system equipment that supplies my cows with water in a large tank in the yard. I use both a windmill and small gas engine. I consider the windmill the most economic pumping power. I only use a gas engine when we do not have wind enough to run the mill. Our windmill has been pumping water for over thirty years and the only cost incurred has been for paint and oil.

The water supplied the dairy cow should be as fresh as possible, and pure. The dairy cow should never be compelled to drink from stagnant pools or small bodies of water that do not have a fresh supply. If the water is supplied from a large tank in the yard, the tank should be kept clean and protected from the weather, both during winter and summer. If water-bowls are used in the stable they should be kept sanitary. Pure, clean, sanitary water is one long step toward stamping out "TB" in the dairy herd.

LIVINGSTON COUNTY COW-TESTING ASSOCIATION REPORT.

LIVINGSTON county, one of the foremost dairy counties of the state, has had in operation a cooperative cow-testing association since the middle of January. An additional member was taken on last month, making a total of twenty-two active breeders in the work.

The association announces that the boarder cows are beginning to show up, there being four unprofitable ones sold for beef during the last month. One pure-bred sire was purchased, one cream separator installed, forty cows produced over forty pounds of butterfat and five produced over fifty pounds. Sixty-nine cows produced over 1,000 pounds of milk, and twenty-three produced over 1,250 pounds. The association average production per cow was

937.2 pounds of milk and 32.7 pounds of butterfat.

J. G. Hayes, owner of a herd of six pure-bred Holsteins, had the high butterfat average production, averaging 1,426 pounds of milk and forty-nine pounds of butterfat for the month. Mr. Hayes also had the high producing cow, showing up 1,250 pounds of milk and 70.3 pounds of butterfat.

Among the other noted improvements, two members started keeping daily milk records of their herds. In most every case the cost of producing milk and butterfat has been lowered by using more economical rations. Pasture is doing nicely and it is expected that the cows will make a better showing for May.—A. Proctor,

WOULD IMPROVE DAIRY BUSINESS.

SEVERAL of the leading representative dairy cattle breeders recently held a conference with the chief of the dairy division at Washington to formulate a policy for improving the dairy business, especially the pure-bred dairy cattle work.

The most important suggestion for building up the average production of milk throughout the country was the wider use of pure-bred sires. This program of eliminating the scrub and grade sires must be consistently and persistently pushed. To this end, the cooperative bull associations was considered the best known method for distributing surplus bulls into new territory.

It was the consensus of opinion on the part of these leaders that breed associations discontinue the practice of giving money prizes for animals at fairs and expositions but rather to devote these funds in putting on educational exhibits. More attention should be given to production records in the awarding of prizes on dairy animals. The economic advantage from the use of pure-breds should be stressed in educational exhibits.

Private and public sales came in for some censure. It was decided that representatives of the dairy cattle associations meet and draft a code of ethics for sales which would eliminate some of the undesirable conditions and practices now obtaining. It was recommended further that the sale prices of all pure-bred animals be published instead of the prices of a few exceptionally high sales.

MICHIGAN MILK PRODUCERS' PLAN DEVELOPING NICELY.

THE Michigan Milk Producers' Association reports that the subscription of the stock for its plant at Adrian is now nearing completion. The capital stock of the Michigan Producers' Dairy Company, which is the name of the new company, is \$120,000; of this, Lenawee county has guaranteed \$60,000 and the members of the Michigan Milk Producers' Association are to subscribe the remaining \$60,000. Mr. B. F. Beach and Helmer Rabild, of the association, together with a number of its board of directors, have attended meetings of the milk producers in the Detroit area where plans for the subscription of the stock have been taken up and \$50,000 of the \$60,000 have been subscribed. Twenty per

cent of the subscription accompanies the application for stock and the remainder is paid in three notes payable in one, three and five months. More than one-third of the capital stock has already been paid in cash. With only \$10,000 more of the stock to be sold among the producers in the Detroit area the Michigan Milk Producers' Association feels that it has taken a long step forward toward the solution of its most vexatious problem, namely, the control of its milk surplus in the Detroit area.

The stock certificates for the capital stock which have been delayed owing to the fact that all the officers have been engaged in the sale of the stock, but are now being issued. The construction of the plant will begin in the very near future.

TO MAKE BETTER CHEESE.

IT is unfortunate, particularly to dairymen who sell milk to cheese factories, that a few producers bring dirty, gassy milk which, when poured into the vats with good milk reduces the quality of the entire days output of the cheese factory. Some effort should be made, by cooperative factories at least, to oblige all patrons to keep their milk in proper shape for making the highest quality of cheese.

A single can of inferior milk will lower the price received and, therefore, force a tax upon all the good producers. It would seem wise for the manager of the company to occasionally make tests of milk delivered and then, through the board of directors find some appropriate plan for either getting the producer of such milk to clean up or dispose of his product elsewhere.

SPRAY INJURY AND ITS CONTROL.

(Continued from page 649).

Injury often resulted. This was plainly shown in the first instance related here. Undoubtedly the change in type of the spray rod to that of the gun type has brought about a lot more injury than resulted when the old type of disc nozzle was used. This is not because the spray gun is defective, but because the one who handles it is likely to be careless and perhaps a little lazy, and instead of endeavoring to get the spray to the distant parts of the tree with a fine mist, he tries to drive it there with the forceful long-distance spray.

Apparently spray injury sometimes becomes so serious that it does as much damage as the insects or diseases which the spraying is supposed to control, and, therefore, serious attention should be given to the control of the injury as well as the fruit pests and diseases.

In conclusion, it seems to me that spray injury may be caused under the following conditions:

Hot sultry weather at time of spraying, or shortly following it, in combination with the forceful application of spray.

Lime-sulphur, even at one to a hundred strength, if applied forcefully and under proper weather conditions may cause injury.

Lime-sulphur will cause injury either with or without the arsenical.

The arsenicals, calcium arsenate and arsenate of lead do not cause injury, even when heavily applied, except possibly slight injury when forcefully applied.

Evidently the common fault of most sprayers is that they get too close to their jobs. Spraying can be done more quickly in this way but not as safely and effectively as when standing away from the tree and letting the spray work its way into the tree without force. Even the forceful spray can be used with safety if it is allowed to spend its force before getting into the tree.



You pay for a De Laval whether you buy one or not

If you are using a worn-out, inferior cream separator, or skimming cream by hand, you are surely wasting enough cream to pay for a De Laval in a short time.

The selection of a cream separator is more important than that of any other machine on the farm, for none other can either save or waste so much, twice a day, 365 days a year.

A De Laval Separator will:

—Skim cleaner for many more years than any other;

—Skim milk clean at lower temperature than any other separator;

—Deliver a higher testing cream, which is more acceptable to the creamery, and easier and less costly to ship.

—And deliver a cream which will make better butter.

Mechanically a De Laval Separator is the best that fine materials and skilled workmanship can make.

—It lasts longer than any other separator, many giving good service for 15 to 20 years.

—It is easier to turn.

—It is easier to clean.

—It is so simple that one tool will set it up or take it down.

—It has the most perfect lubricating system.

Do not be deceived by separators which are claimed to be "just as good and cost less." When you consider its greater savings, greater reliability, longer life, the extra time it saves, and the greater satisfaction it gives, the De Laval is, in the end, by far the most economical cream separator made.

Even if you have only two cows it will pay you to have a De Laval. One can be bought on such easy terms that it will pay for itself in less than a year. Why not see your De Laval agent at once or write us for full information?

The De Laval Separator Co.

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Sooner or later you will use a
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Bred
in the
Purple

ACHIEVEMENT

The reward of pure breeding; the accomplishment of quality. Success has again contributed more laurels to the already remarkable record of

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The Sire Supreme

At the International Live Stock Exposition, where gathers each year the elite of North American Cattle to compete for the coveted awards, five more honors have been bestowed upon the "get" of Edgar of Dalmeny. You too may share these honors. A bull by this world famous sire will prove a most valuable asset to your herd. Write us today.

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ORION, MICHIGAN

W. E. SCRIPPS, Prop. Sidney Smith, Supt.

REGISTERED Aberdeen-Angus. Ten heifers, six bulls from eight to fourteen months. Best of breeding, the growthy kind that make good. Reasonable. Inquire F. J. WILBER, Ohio, Mich.

Brookwood Guernseys

Birmingham, Mich.

During the past year, we have completed Advanced Registry with 7 Guernsey Cows—two of which were heifers with their first calves.

The average butter-fat production of these cows was 650 pounds, and three of them were leaders of their respective classes for the State of Mich.

We have for sale a number of good bull calves from these cows and their daughters, sired by Rosetta's Marshall of Waddington, No. 54420, Grand Champion Bull at the Michigan State Fair last year.

Our herd is not large, but it is select. Visitors are always welcome at the farm. Prices are reasonable, considering the quality of the stock.

JOHN ENDICOTT, Proprietor

Registered Guernseys

A fine bull ready for heavy service \$125.00
J. M. WILLIAMS, North Adams, Mich.

For Sale Guernsey Herd Bull

3 yr. old. Sire, Anton's May King sold for \$7,000.00. Dam, Bonnie's Bloom 530 lbs. B. F. Price \$175. Fall bull calves by above sire. Accredited Herd.
GILMORE BROTHERS, Camden, Mich.

GUERNSEYS—REGISTERED

Containing blood of world champions.

HICKS' GUERNSEY FARM, Saginaw, W.S. Mich.

Registered Guernsey Bull 14 mo. old \$50. Bull calf \$25. May Rose breeding, also heifers.
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WINNWOOD HERD

Registered Holsteins

It was through the daughters of
Flint Maplecrest Boy that
Sir Ormsby Skylark Burke

Our Junior Herd Sire

produced the Junior Champion and Reserve Grand Champion Heifer, at the Michigan State Fair this year, in a class of 38.
His get won first in Calf Herd, also first in get of sire, in a class of 13.

A son of either of these great bulls will help the individuality and production of your herd.

We have bulls at dairymen's prices, and we also have bulls at the breeder's price, from dams with records up to 38 lbs. of butter in seven days, and 1168 lbs. of butter in one year.

Ask us about a real bull, a Maplecrest or an Ormsby.

JOHN H. WINN, Inc., Rochester, Mich.

Cluny Stock Farm

Offers Cluny Konigen Pontiac Hengerveld No. 254554.

Born September 20, 1920

A son of our Junior Herd Sire Dutchland Konigen Sir Rag Apple whose two nearest dams average over 35 lbs. butter and 720 lbs. milk in 7 days.

The 7 nearest dams of the bull we offer average over 600 lbs. milk and 28 lbs. butter in 7 days.

His dam is an extra good individual with a wonderful type udder. Her record is 19,774 lbs. butter from 420.8 lbs. milk at 3 yrs. 7 months.

Combining the blood of King Segis Pontiac, Pontiac Korndyke, King of the Pontiacs, Colantha Johanna Lad and other great sires he spells Production, Breeding and Type.

He has an extra straight top line and is good in every way. A little more black than white. Price \$150.00.

R. B. McPherson, Howell, Mich.

Holstein-Friesian pure-bred bull calves, tuberculin tested herd. Prices are right. Larro Research Farm, Box A, North End, Detroit, Mich.

Wiscogin Farm offers Holstein-Friesian bulls ready for light service. From sire whose 6 nearest dams average 33.31 lbs. butter for 7 days. A.R.O. Dams from 18.33 to 21.51 lbs. Herd under state and Federal Supervision. Oscar Wallis, Unionville, Mich.

A Good Note accepted in payment of finely bred registered Holstein bull calves. Quality of the best, and at prices within reach of all. Write GEO. D. CLARKE, Vassar, Mich.

The Traverse Herd

We have what you want in BULL CALVES, the large, fine growthy type, guaranteed right in every way. They are from high producing A. R. O. ancestors. Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL

Traverse City, Mich.

Holstein Friesian heifer and bull calves, purebred registered and high-grade. Price \$20 up. Splendid individuals and breeding. Write us your requirements. Browncroft Farms, McGraw, N. Y.

\$100 EACH

Bull calves ready for service. Grandsons of King of the Pontiacs. From dams with A. R. O. Records of 27 to 29 lbs. for seven days—Federal Tested.

J. B. JONES FARMS
Romeo, Mich.

Registered yearling Holstein-Friesian bulls priced to sell, 42 lb. breeding, guaranteed O. R. shipped on approval. B. B. Reavey, Akron, Mich.

Registered Holstein Bull

born Nov. 2, 1919. Dam at 8 yr. 22,920 milk, 895 lb. butter; at 7 yr. 305 days 16,251 milk, 654 lbs. butter. She has three A. R. O. daughters, one above 25 lbs. in 7 da. 99 in 30 days. He is sired by a 24 lb. grandson of Colantha Johanna Lad. Also three heifers 2 yr. old, one fresh heifer calf by side. Other two due in May. Bred to sire above. State and Federal full accredited herd. Priced for quick sale. Pedigrees and photo on request. VERNON E. CLOUGH, R2, Parma, Mich.

Holstein Bull Calves from the famous Pontiac Herd for sale at a bargain on our ranch north of Clare, Michigan. For particulars W. C. CORNWELL, Saginaw, Mich.

For Sale King Segis Breeding

Bulls of show type that are out of A. R. O. Dams.

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HERE IS A GOOD ONE

Born June 2d 1920 by Maplecrest DeKol Hengerveld whose three sisters have each produced over 1200 lbs. of butter in a year. Two of them former World's Champions. Bulls dam has just been tested and made nearly 27 lbs. We believe she will make 30 lbs. at her next freshening. Write for pedigree.
F. B. LAY, Kalamazoo, Mich.

Whitney Farms Holsteins

A grandson of Duchess Skylark Ormsby ready for service. Nicely marked bull calves from three weeks to six months of age. These calves have the type and are priced to sell. Herd under Federal supervision. Pedigrees and prices from WHITNEY FARMS, Whitney, Mich.

32 Lb. Bull, \$150

Pure bred, registered, federally tested. Dam, a daughter of King Segis Pontiac, 37 lbs. Good individual, mostly white, 1 yrs. old. Guaranteed healthy and breeder. Priced to sell quickly. Pedigree on request. ALBERT G. WADE, White Pigeon, Michigan.

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for three young pure bred Holstein bulls, whose dams all have high milk and butter records. Send for pedigrees and prices.
JOSEPH H. BREWER, Grand Rapids, Mich.

\$250 Buys three high grade Holstein heifers, two yrs. old, all milking and one registered Holstein bull, old enough for service. Herd under federal and state supervision.
HENRY S. ROHLFS, R. 1, Akron, Mich.

\$75 buys a registered Holstein Bull ready for service. Sired by 29 lb. bull, nearly all white and not a reactor in our herd.
DORUS HOVER, Akron, Mich.

\$50 A Year gets a granddaughter of Maple Crest Kora Heng, from best herd in Wayne Co. Cow Testing Ass'n. Federal tested, no reactors.
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Herefords

Repeaters, Beau Donalds, Fairfaxes, and Farmers represented in our herd. Repeater 173rd, a son of old Repeater, at head of herd. Both sexes and all ages for sale.

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Herefords a few choice October bull calves ready to ship. Come get your pick.
E. J. TAYLOR, Fremont, Mich.

Registered Herefords for sale. Cows and 2 herd bulls.
RALPH CALHOON, Bronson, Mich.

Reg. Herefords for sale. Two good bulls 8 and 20 mos. old, also young cows. Prices reasonable.
REED SCHULTZ, R. 3, Homer, Mich.

Jersey Thoroughbreds

Few cows and bull calves. Best breeding line. Guaranteed. Tuberculin tested twice a year. If you have no money will take bankable note. E. W. VASVARY, 509 Free Press Building, Detroit, Mich., Main 1267.

One registered Jersey Cow three years old, one heifer one year old. Jersey heifers eligible for registration. Price \$200. Highly bred.
G. F. PARIS, Milford, Mich.

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COLON C. LILLIE, Coopersville, Mich.

BUTTER BRED JERSEY BULLS FOR SALE CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

For Sale Jersey Bulls ready for service. Lad, Majesty breeding. WATERMAN & OXFORD, Packard Rd., Ann Arbor, Mich.

Jersey Bull or Sale Springfield Owl breeding. Herd tuberculin tested. Satisfaction guaranteed. Age six months.
Fred L. Bodimer, Reese, Mich.

Spring Lamb Crop Short

A MATERIAL shortage in spring lambs is indicated in advices received by the United States Department of Agriculture from the western sheep country.

This means a smaller supply of wool. Contracting of both wool and lambs has reached large dimensions during recent weeks. Numerous large operators are reported to be scouring the country for new crop lambs and many sales at nine to ten cents per pound are reported, with the latter price being generally refused in western states. The price last year was five to seven cents. Fleeces on the sheep's backs are selling as high as thirty-five to thirty-eight cents per pound, with some clips, including the Jericho clip, selling up to forty cents.

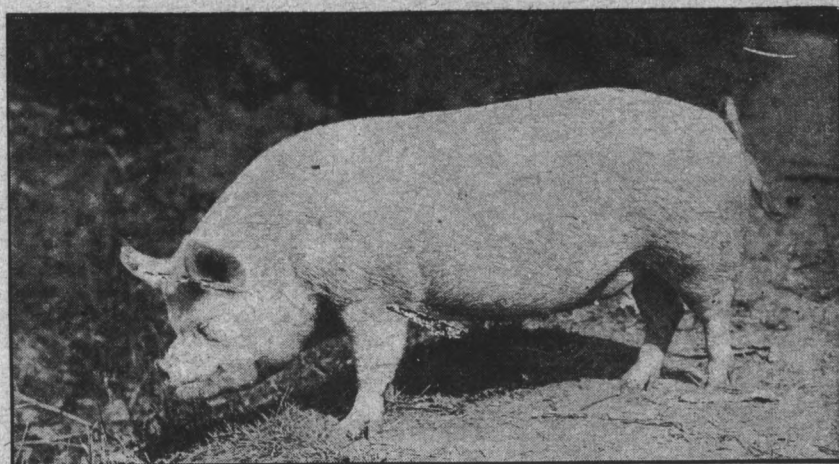
The situation is attributed to a shortage of ewes, the over age of many breeding flocks, and losses of early spring lambs on account of cold weather.

that very few young western ewes will reach market centers during the coming season.

WATCH OUT FOR PIG WORMS.

MANY farmers believe that older hogs are immune to round pig worms, but that pigs are most susceptible. These worms have been found working havoc in both. The worms delay or stop growth because they cause a loss of appetite. That brings on general unthriftiness. In six inches of the small intestine of one pig, sixty-three worms were counted. The pig, before being killed, had been losing weight daily.

To prevent round worms keep the pigs coming. Keep them in clean, dry lots where rubbish and cobs are burned regularly. Drain the pastures and lots. Don't throw corn into mud. If there is an outbreak of round worms



Hogs in the Condition of this One Are the Result of Good Care. Such Hogs Are Kept Free from Pig Worms and Other Hog Pests.

er and the backward spring season. A winter lamb and sheep market higher than the trade anticipated, a shortage in the visible supply, and the recent sharp upturn in wool values have created bullish sentiment in the markets.

Money, which was tight last fall and in the early winter, now appears to be abundant and large speculators and western feeders are buying freely. This fact, combined with the short crop, leads many in the trade to believe that the coming summer and fall supply of both feeding and fat lambs at the large market centers will be far below normal. Present conditions indicate that many lambs will be held in the west for fattening for next winter's market.

Some reports indicate that large speculators and feeders have already contracted approximately half the lamb crop in Idaho, Oregon and Washington. According to the best information available, the summer marketward movement from these states will be late in getting under way, and will probably not reach sizable proportions before the last of July or early in August.

Ewes wintered poorly and because of the backward spring were not only late getting on the range but started the grazing season in poor flesh, with the result that February lambs, the crop of which was more nearly normal than that of later lambs, had a poor start.

The April lamb crop is very short, according to all reports. Many flockmasters tried to lamb the April crop on the open range but cold weather caused heavy losses. Breeding flocks are seriously over-aged but there is an acute shortage of young stock and it is believed that a very attractive market will be necessary to draw any large quantity of breeding flocks to the shambles. Young ewes are in strong demand all over the west and bids of \$8 to \$12 a head have not brought out many. It seems certain

use santonin and calomel, equal parts, five to ten grains each for a 100-pound pig; seven and a half to fifteen grains for the 200 to 300-pounder.

Allow free access to such condiments as air-slaked lime, charcoal, powdered sulphur, or common salt.—E. W. Gage.

SPOILING GOOD PIGS.

AT weaning time the pigs usually look smooth and attractive. It frequently happens that after they have been separated from the mother only a short time they look rough and begin to show symptoms of becoming runty. Here is one of the most difficult tasks of the hog raiser. But comparatively few men can keep the pigs looking sleek and thrifty during the period immediately after they have been taken from the mother.

The keynote to the successful handling of the pigs at this time is to have them on a nearly full ration of slop and grain before they are removed from the sow. If this is done, they will scarcely miss the milk when it is removed from them. The pigs will begin eating when they are only three or four weeks old. If a creep is provided at this early age so that the sow cannot interfere with them while at their meal, they will develop an appetite for a little shelled corn. If the corn is soaked, they will start eating it earlier. However, after the pigs have learned to eat the corn there is no particular advantage in soaking it.

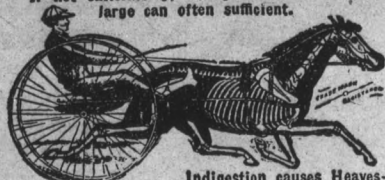
The pig feeder will also aid the little fellows in their fight with intestinal worms by providing a full ration during this particular period and until the pigs are weighing around seventy-five pounds. Much less loss of flesh and fewer runts will be caused by worms where the feeding is properly done.

Mineral matter in hog rations reduces the cost of producing pork and adds to the daily gain in every case.

NEWTON'S

For HEAVES, COUGHS, DISTEMPER, INDIGESTION

A Conditioner and Worm Expeller, Wind, Throat, Stomach and Blood. Use two large cans for Heaves; if not satisfactory, money refunded. One large can often sufficient.



Indigestion causes Heaves—

and more troubles in horses than all other diseases combined. Keep Newton's Compound on hand.

Occasional dose keeps the horse in good condition. More for the money than anything obtained for similar purposes. Two pounds net in large can, or 75 doses; 13 ounces in small can. Economical and safe to use, dose is small. Powder form, in air-tight cans. On the market over 30 years. Used in veterinary practice many years before.

Equally effective for Cattle and Hogs.
65c and \$1.25 per can

Sold by Dealers or by Parcel Post
THE NEWTON REMEDY CO., Toledo, Ohio

Bee Hives, Section Boxes



Comb foundation, Smokers, etc. Complete outfits for beginners. Agents for the A. I. Root Company, in Michigan. Send for catalog. Beeswax wanted.

Berry Baskets and 16 quart crates. A grade wood quart baskets, band waxlined paper baskets. Special offer of 200 waxlined paper baskets post-paid for \$1.70, to towns within 150 miles of Lansing.

Send for Price List.

M. H. HUNT & SON,
Box 525, Lansing, Mich.



MINERAL COMPOUND
FOR SYMPTOMS OF HEAVES
In use over 50 years.

Booklet Free
\$3 Pkg. guaranteed to give satisfaction or money back. \$1 Pkg. sufficient for ordinary cases.
MINERAL REMEDY CO. 463 Fourth Ave., Pittsburgh, Pa.

SOY BEANS WANTED

Chicago Heights Oil Mfg., Co.
Chicago Heights, Ill.

CATTLE

INAUGURAL
Hereford AUCTION
St. Clair, Mich. Wednesday, June 14
10 YOUNG BULLS
(Most of them Ready for Service)
40 Open & Bred Heifers
(Some Have Calves At Side)

T. B. Test and Registration Papers with each Animal. Consigned by up-to-date MICHIGAN BREEDERS that under direction of T. F. B. Sotham & Sons, produce peerless Hereford Baby Beef, to melt in the mouths of delighted consumers patronizing butchers who buy it of DETROIT PACKING CO.
Every progressive farmer who understands will attend Hike & Sale to wise-up on this movement.
HERFORD HIKE JUNE 13th.
HELP BUILD THIS SOLID FOUNDATION.
GIVE THE NEW PLAN FAIR TRIAL.
NO FOOL FADS OR FAKES.
NO AVERAGE TO BEAT.

Just prime cattle, true Herefords, of the best bloods of Earth's best beef breed. Fairfaxes, Disturbers, Line-bred Anxieties, etc. topped from herds of honest breeders to sell honestly to honest buyers, and benefit all concerned.
The sale managers will be glad to send you catalog and full particulars. Write right now. Address

T. F. B. Sotham & Son, St. Clair, Mich.

Milking Shorthorns Bull calves for sale. Also 2 cows. ROSEMARY FARMS, Williamston, Mich.

FRANCISCO FARM SHORTHORNS
FEDERAL ACCREDITED HERD
One red Scotch bull ready for service. Two bull calves ten months old. Poland-China weanling pigs ready to ship. P. P. POPE, Mt. Pleasant, Mich.

Clayton Unit Shorthorn Breeders' Assn. Scotch, Scotch Top and Milking Shorthorns for sale all ages. W. J. Hinkley, Sec'y, Flushing, Mich.

FOR SALE

Polled Shorthorn Cows & Heifers in calf and calf by side. Also a few young bulls. Herd headed by Victor Sultan and Royal Nonpareil.
We can please you in richly bred cattle with quality at farmers' prices.
GEO. E. BURDICK, Mgr.
Branch County Farm, Coldwater, Mich.

Shorthorns for sale. White and Roan bulls by imported sires or from imported dam. J. A. BARNUM, Union City, Mich.

Veterinary.

CONDUCTED BY DR. W. C. FAIR.

Advice through this column is given free to our subscribers. Letters should state fully the history and symptoms of each case and give name and address of the writer. Initials only are published. When a reply by mail is requested the service becomes private practice and \$1 must be enclosed.

Leaking Milk.—Have a Holstein cow that leaks nearly all of her milk. Is there a remedy? J. O. B., Ypsilanti, Mich.—Milk her three or four times a day, or use teat plugs.

Cow Over-eats.—What can I do for a cow that gorges on ground feed and corn. C. H. S., Wayne Co.—Limit her supply, and feed more roughage, also keep bowels open.

Barrenness.—I have a cow that had her first calf one year ago; she ran with bull all last summer, but she is not with calf, and fails to come in heat. I also have another heifer which freshened last fall, she has never been in heat since she calved. I am anxious to breed both. B. F. McC., Galien, Mich.—Yohimbine is the best known drug to stimulate the sexual organs into action, but it is expensive. Give each cow one dram of ground nuxvomica and one ounce of powdered licorice in ground feed twice a day. In treating these kind of cases, unsatisfactory results may be expected, therefore, do not expect too much, but keep up the treatment for several weeks.

Abnormal Appetite.—I have a few hundred baby chicks, several of them die daily. They pick each other and the ones which are most picked die. I was advised to feed them raw meat, but it failed to save them. Mrs. J. S., Davidson, Mich.—I can give you no better advice than to recommend that you clean and disinfect your incubators, chicken house, yard, keep food away from the chicks until they are two days old, and don't keep them housed too long, let them out to run on the ground. Change their food supply and be sure it is of good quality.

Diarrhea.—My chickens take sick suddenly, wings drop, comb turns a dark color, they purge and die in twenty-four hours. Have been feeding cooked potatoes and chop. D. W. McC., Port Hope, Mich.—If you will make a complete change in their feed it should help them. Mix equal parts of ginger, powdered gentian, cinnamon, and bicarbonate of soda together. A teaspoonful is enough for half a dozen hens and it should be given to them twice daily.

Weak Chicks.—I have a lot of Rhode Island chicks a little over two weeks old; they have been smart and healthy till a few days ago, when some of them got so they could not walk. Their legs spread out and they were unable to stand and they stop eating. Have been feeding them oat meal and thick milk, and they are kept where it is warm and dry. Some of the others show same symptoms. Mrs. M. L. H., Rhodes, Mich.—Doubtless you have given your chicks good care, they have been housed in a warm, comfortable place, fed a good quality of food, but they go wrong and die. Perhaps they are not hardy stock, or may have been fed before they were forty-eight hours old, or they may have chilled on account of exposure. Are your coops free from lice and mites? Change their feed.

Ailing Horse.—Please tell me what would be good for a horse that fails to perspire, but pants badly when he is working. F. M., Remus, Mich.—His bowels should be kept open, the skin kept clean, he must not be over-exerted, and during extremely hot sultry weather rested, or required to do light work. Give one-ounce doses of sweet spirits of nitre in drinking water three or four times a day, only, when you find him not perspiring fairly free.

Worms.—I have ten last fall pigs that are not thrifty; they are fed on middlings and skim-milk. Have noticed some of them passing worms which are several inches long. F. A. S., Fowlerville, Mich.—To destroy intestinal worms starve the pigs for twenty-four hours, then give for each fifty or sixty pounds of body weight, in some slop or water, two and a half grains each of santonin and calomel, one dram of powdered areca nut and a half dram of baking soda. It may be necessary to repeat the dose in ten or twelve days. I would also suggest that you collect the excrement and lime it; this will prevent reinfection of your pigs.

The Maple's Shorthorns

Kirk Levington Lad, by imported Hartforth Welfare, in service. Bulls and heifers for sale.

J. V. Wise, Gobleville, Mich.

BIDWELL SHORTHORNS

BUY A BULL

that will put weight on your dairy calves—the difference will soon pay for the bull. Now selling good Scotch and Scotch-topped yearlings, reasonably priced. We guarantee every animal to be a breeder. Federal Test. One hour from Toledo, Ohio, N. Y. C. R. B.

BIDWELL STOCK FARM,
Box D, Tecumseh, Michigan

Richland Shorthorns

Annual Sale June 21st at the farm. Thirty Heifers—Fifteen Bulls. Best lot we have ever offered. Write for Catalog. Plan to attend. Special prices on Bulls in order to make room for this Sale. Office at

C. H. Prescott & Sons,
Herd at Prescott, Mich. Tawas City, Mich.

Central Mich. Shorthorn Breeders' Assn.
offer for sale both milk and beef breeding, all ages. Write M. E. MILLER, Sec'y, Greenville, Mich.

Milking Shorthorns of best Bates breeding, balls, cows and heifers for sale. E. H. KURTZ, Mason, Mich.

Don't you want a good Shorthorn, priced in keeping with the times? ROBERT MARTIN, R. 3, Woodland, Mich.

HOGS

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C. C. COREY,
2423-30 First National Bank Building,
Detroit, Michigan

Brookwater Duroc Jerseys

Gilts bred for summer farrow. Only a few left. Fall gilts—open. Very good. Fall boars. Large enough for light service. Prices reasonable. Mail orders a specialty.

BROOKWATER FARM,
H. W. Mumford, Owner J. B. Andrews, Manager.
ANN ARBOR, MICHIGAN



Spring pigs by Walt's Orion, First Sr. Yearling
Detroit, Jackson, Gd. Rapids and Saginaw 1919
Phillips Bros, Riga, Mich.

Sows & Gilts

bred for July, Aug. and Sept. farrow for sale at reasonable prices. Also a few high class spring and fall boars ready for service and one 2 yrs. old boar, a grandson of Panama Special, at a bargain if you can use him. We guarantee satisfaction. Write for prices and description or better come and see them. Visitors always welcome. Sows bred for spring farrow all sold.
Thos. Underhill & Son, Salem, Mich.

Collinsdale Duroc Farm, Lyons, Mich., R. 1.
Greatest Blood Lines in Duroc Hogs

Herd Boars by Great Orion Sensation, Pathfinder, Duration and Great Wonder I Am. Now have for sale three yearling boars by Wolverine Sensation. For sale at all times, sows, gilts or boars registered. Sold under a positive guarantee and worth the money. Write for prices.
L. A. BURHANS, OWNER

AM SELLING

a great offering of bred Duroc sows and gilts March 4th. They are mostly bred to Orion Giant Col., son of Ohio Grand Champion. Get on mailing list for catalog. W. C. TAYLOR, Milan, Mich.

WHITNEY FARMS DUROCS

Well grown fall gilts, either bred or open. A most excellent line of spring pigs at farmers' prices. Several extra fine boars. Stock is immune. Pedigrees and prices from Whitney Farms, Whitney, Mich.

Woodlawn Farm Duroc Hogs

A well kept herd, best of blood lines, with size and breeding qualities, stock of all ages for sale at reasonable prices. W. E. BARTLEY, Alma, Mich.

Michigana Farm Durocs

Boars, open and bred sows and spring pigs. Satisfaction guaranteed. MICHIGANA FARM, Pavilion, Mich.

Pure-Bred Duroc Jersey Hogs; we usually have good boars and sows of all ages for sale. Reasonable prices. Larro Research Farm, Box A, North End, Detroit, Mich.

DUROC JERSEYS: A few choice bred gilts for sale. CAREY U. EDMONDS, Hastings, Mich.

Westview Duroc Bred Sows
all sold. Have two spring boars left at a reasonable price. Will book orders for April & May Pigs. ALBERT EBERSOLE, Plymouth, Mich.

Duroc Jersey Bred sows and gilts bred for Aug. and Sept. farrow. A few choice ready for service boars. Shipped on approval. Satisfaction guaranteed. F. J. Drott, R. 1, Monroe, Mich.

Duroc Jerseys heavy boned, low down type breeding stock for sale. CHAS. BRAY, Okemos, Mich.

Duroc Jerseys Bred Gilts all sold. Now offering some choice fall boar pigs large enough for spring service. RUSH BROS., Romeo, Mich.

DUROC-JERSEYS Do you want a good Pathfinder boar pig? E. D. HEYDENBERG, Wayland, Mich.

BIG TYPE CHESTER WHITES

The prize winner kind from the best prize winner bloodlines. Early developers, ready for market at six months old. I have started more breeders on the road to success than any man living. I want to place one hog in each community to advertise my herd. Write for agency and my plan. G. S. BENJAMIN, R. F. D. 10, Portland, Mich.

CHESTERS We are all sold out of Boar, Bred Sows and Gilts. For spring pigs write WEBER BROS., Royal Oak, Mich., 10 Mile and Ridge Rd., Phone 408.

Chester Whites Spring pigs by Monster, Raleigh B. Choice Prince and others. Money back guarantee. Fred L. Bodimer, Reese, Mich.

Chester Whites bred gilts and fall pigs of excellent quality and breeding. Satisfaction guaranteed. F. W. Alexander, Vassar, Mich.

O. I. C. & Chester White Swine. Strictly Big Type with QUALITY. We are sold out of everything but a few choice fall gilts. Will book orders for Spring pigs. Of the best Prize winning blood lines. Will ship C. O. D. And record them free in purchaser's name. NEWMAN'S STOCK FARM, R. 4, Marlette, Mich.

O. I. C. fall gilts ready to breed. Orders booked for spring pigs. Write or call and see our herd. We ship C. O. D. and Register free. GEO. M. WELTON & SON, Middleville, Mich.

O. I. C. and Chester White Spring Pigs from prize-winning stock of the most popular blood lines. We ship C. O. D., register in buyer's name and guarantee satisfaction. John C. Wilk, Alma, Mich.

O. I. C's Choice Aug. and Sept. open gilts also booking orders for spring pigs. OLOVER LEAF FARM, Monroe, Mich.

O. I. C. Bred gilts all sold. Orders booked for spring pigs. A. J. BARKER & SON, Belmont, Mich.

O. I. C. Bred sow's all sold. Booking orders for spring pigs. H. W. MANN, Dansville, Mich.

O. I. C. pigs at very reasonable prices for June and July shipment. O. J. THOMPSON, Rockford, Mich.

O. I. C'S. last fall gilts due Aug. and Sept. Spring pigs not akin. Big Type. 1-2 mile west of Depot. Citizen Phone. OTTO B. SCHULZE, Nashville, Mich.

L. T. P. C. Fall Boars

at bargain prices. Fall gilts open or with breeding privilege. Write or see them. A. A. FELDKAMP, R. 2, Manchester, Mich.

Big Type Poland China Spring boars at \$15 each. Sired by Clausman Buster and Hovers Liberator. Also gilts bred for Sept. farrow at \$40 each. All stock shipped on approval. Come and see them or write DORUS HOVER, Akron, Mich.

For 30 years we have been breeding Big Type Poland China hogs on the same farm. We have sold over 100 head each year for the last 15 years for breeding purposes. There's a reason! The farmer has found our kind very profitable. We now offer 25 sows and gilts bred for summer farrow \$30-\$50. JNO. C. BUTLER, Portland, Mich.

L. T. P. C. Gilts bred for Spring litters all sold. Am offering very choice Summer Gilts bred for June and July litters also Fall Boars and Spring Pigs. Clyde Fisher, R. 3, St. Louis, Mich.

L.T.P.C. \$15, \$20 & \$25

Spring pigs with real breeding at the above prices. We are also offering a few choice fall gilts bred for summer farrow. Hart & Cline. Address F. T. HART, St. Louis, Mich.

Large Type P. C.

Largest herd of individuals in state. Everything sold Nothing to offer until spring pigs are ready to ship. I thank you. W. E. LIVINGSTON, Parma, Mich.

Big Type P. C. some very choice boars double immune, out 1100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

BIG TYPE POLAND CHINAS
Bred gilts for sale. Choice individuals of rich breeding at prices within your reach. Come see them or write. WESLEY HILE, R. 6, Ionia, Mich.

Large Type Poland Chinas. Some real classy stock carrying Mastodon Clansman and Yankee blood. Everything registered, prices right. ERNEST E. REA, Hillman, Mich.

Large St ain P. C. nothing more for sale at present. I thank you. H. O. SWARTZ, Schoolcraft, Mich.

Big Type P. C. Boar pigs that can't be beat in Mich. Sired by Big Bob Mastodon and Peter A. Pan. 50 head to pick from. C. E. Garnant, Eaton Rapids, Mich.

BIG TYPE Poland Chinas, leading strains at lowest prices. Both sex, all ages, and bred sows and gilts. G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Big Type Chester White March boars. Sired by Model's Giant and Hill's Big Buster. Out of granddaughters of Alfalfa Wonder. LUCIAN HILL, Tekonsha, Mich.

LEONARD'S B. T. P. C. Herd headed by Leonard's Liberator. Orders booked for boar pigs at weaning time. Call or write E. R. LEONARD, St. Louis, Mich.

Hampshires book your order for spring boar pigs now. A few gilts, now ready for summer farrow. JOHN W. SYNDER, R. 4, St. Johns, Mich.

Hampshires For sale. Fall boars, fall gilts bred to farrow in Sept., spring pigs. I. R. BAUSERMAN, R. 1, Three Rivers, Mich.

SHEEP

A Real Bargain at Kope Kon Farms

We offer 40 big healthy yearling Shropshire and Hampshire Rams all registered at \$25.00 each. Come or write while the picking is good. S. L. WING, Coldwater, Mich.

LATEST MARKET REPORTS

GRAIN QUOTATIONS

Monday, May 29.

Wheat.

Detroit.—Cash No. 2 red \$1.23; No. 2 mixed and No. 2 white \$1.21; July \$1.22.

Chicago.—No. 2 red \$1.26; No. 2 hard \$1.23@1.27; July \$1.18½.

Toledo.—Cash \$1.25; July \$1.21.

Corn.

Detroit.—Cash No. 2 66½c; No. 3 yellow 65c.

Chicago.—No. 2 mixed 59½@61¼c; No. 2 yellow 60@61½c.

Oats.

Detroit.—Cash No. 2 white 44c; No. 3, 42c.

Chicago.—No. 2 white 37¼@41½c; No. 3 white 35¼@39c.

Beans.

Detroit.—Immediate and prompt shipment \$9.

New York.—Choice pea beans \$9@9.25; red kidneys \$8.75@9.

Chicago.—Michigan choice, hand-picked \$8.50@8.65; red kidney according to quality \$8.50.

Rye.

Detroit.—Cash No. 3, \$1.06.

Chicago.—No. 2, \$1.00½.

Seeds.

Detroit.—Prime red clover, cash at \$13.75; alsike \$11.50; timothy \$3.25.

Toledo.—Prime cash \$13.75; alsike \$11.50; timothy \$2.90.

Feeds.

Detroit.—Bran \$29; standard middlings \$30; fine middlings \$31; cracked corn \$30.50; coarse corn meal \$28; chop \$24 per ton in 100-pound sacks.

Hay.

Detroit.—No. 1 light timothy \$23@23.50; standard and light mixed \$22@22.50; No. 2 timothy \$21@21.50; No. 1 clover mixed \$17.50@18; No. 1 clover \$17@17.50; rye straw \$14@14.50; wheat and oat straw \$13@13.50 per ton in carlots.

WHEAT

The long struggle in May wheat at Chicago appears to be at an end. Heavy deliveries, large receipts at primary markets, a slender demand for cash wheat and favorable growing weather for the new crop were the undoing of the "bulls." The price of cash wheat at Chicago has dropped about 20 cents in the last week and is now below a shipping basis compared with southwestern points instead of being at a premium as it was a short time ago. Demand for flour broadens spasmodically but total purchases are moderate. Although buyers have been indifferent, receipts at primary markets for the last ten days have averaged approximately 1,000,000 bushels per day, the largest on record at this time of the year. After the drastic decline which has already taken place, further losses should not be severe as both mills and exporters are expected to be more willing to buy. On the other hand, unfavorable weather for the new crop is about the only factor that can bring a pronounced upturn within the next few weeks. The spring wheat outlook is excellent with ample moisture even in the states which have suffered from drouth for the last several years.

CORN

Wet weather has made corn planting later than the average and may prevent an increase in acreage. The crop where planted, is making a favorable growth in most sections. Receipts of corn at primaries in the last two weeks have been the largest on record at this season and about twice as large as the average. The market has weakened along with wheat but the loss has been relatively small. Exporters are buying moderate quantities but Argentine corn is becoming more suitable for shipment and is being pressed upon the European market although it is still priced higher than American corn.

OATS

The oats crop is less promising than either wheat or corn as the acreage is small and the crop late. Cool weather is needed to bring it through without serious damage. The domestic and export demand for oats has broadened again but the receipts are about 25 per cent larger than the average for this season of the year.

FEEDS

Demand for by-product feeds generally slackens a great deal at this season but it is even smaller than usual. Only gluten feed and hominy feed are showing much strength, due partly to limited operation of corn industries.

HAY

Alfalfa hay prices remain weak in most markets with some new crop offered. Prairie hay is also sagging but prices upon good quality timothy hay are firm, with the old crop well shipped out in many sections.

BUTTER

Unusually broad consumptive demand for butter is the chief prop under the market at the present time. Prices have been easing slightly but have held well in view of the big increase in receipts at principal markets. Butter going into storage at present consists chiefly of shipments contracted for at a higher level of prices, the owners storing in the hope that the market will advance enough to let them out. A slightly lower level of prices will not be surprising within the next two or three weeks when the supply usually reaches peak for this season, but on the whole the market is in excellent shape and the decline should be small.

Prices for 92-score fresh butter were as follows: Chicago 34c; New York 35½c. In Detroit fresh creamery in tubs sells for 33½@34c per pound.

POULTRY AND EGGS

Although receipts of eggs are running above any recent year and storage holdings at the leading markets are 40 per cent larger than the average of the last three years, prices are holding rather steady. The supply usually tapers more or less from this time on through the summer. The supply of poultry arriving at the lead-

ing markets from week to week since the first of January has been above the average, but the consumers have bought freely and frozen stocks in storage were reduced to 53,000,000 lbs. in the first four months of the year, the largest decrease in that period in at least five years.

Chicago.—Eggs, fresh firsts at 24@24½c; ordinary firsts 22@22½c. Live poultry, hens 24½c; broilers 36@46c; roosters 14c; ducks 30c; geese 26c; turkeys 25c.

Detroit.—Eggs, fresh candled and graded 24@25c; storage 27½@28½c. Live poultry, broilers 47@52c; hens at 27@28c; roosters 17c; geese 13c; ducks 25c; turkeys 30c.

BEANS

The Michigan bean market reached a new height last week, closing at \$9.25 for choice hand-picked white stock f. o. b. shipping points. Extremely light stocks are the principal reason, combined with insistent demand for a limited quantity. The situation is extremely strong with those who have any beans left in position to name their own price for them.

POTATOES

Lighter shipments of old potatoes permitted prices to recover slightly in the last few days. Northern whites are bringing \$1.35@1.40 per 100 pounds sacked f. o. b. shipping points and \$1.40@1.50 in the Chicago carlot market. About half of the market supply consists of new potatoes which are bringing around three to four cents per pound.

WOOL

After a brief breathing spell the wool market took another upswing last week. Prices were slightly higher at seaboard markets and considerably higher at interior points. Some Texas wools were sold at prices equivalent to 46@52½c at Boston and 50c was paid

in Ohio for delaine clips. Offers in Missouri and Iowa ranged as high as 36c. The world-wide character of the advance is shown by the performance at the three London auctions this year. The January series closed seven to fifteen per cent higher than the auction in December. March was five to fifteen per cent higher than January, and the May series just closed was five to fifteen per cent higher than March. The emergency tariff alone has not been responsible for the advance in this country. Mills are being forced to buy and the American Woolen Company has withdrawn all its lines of goods presumably to reprice them in line with the raw wool market. April consumption of wool by the mills was less than during March.

GRAND RAPIDS

Michigan strawberries began moving in Grand Rapids this week, opening prices on the city wholesale market ranging from \$4@4.50 a case. The crop, which is unusually large this season, will not begin moving in great volume until next week. Cannerymen have announced they will take all the berries available at their contract prices, which range from \$1@1.25 a case, the crates returned. This has strengthened the feeling that prices will be fair despite the large crop. The berry deal was overshadowing all others. Boxes were in good demand and prices \$2 per 1000 higher. Baskets also have risen 25c a dozen. Demand for vegetables was good early this week and were mainly steady, except on old potatoes, which have sagged to 75@85c a bushel with supplies liberal. Leaf lettuce soared at the close of the hothouse crop but turned weak as more outdoor came in. Poultry was easier with the supply larger. Eggs were steady at 21@22½c.

DETROIT CITY MARKET

The marketing here was very brisk, the market being crowded with both buyers and sellers. Green onions and spinach were in greatest demand while potatoes, eggs, poultry, rhubarb and horseradish were plentiful. The prices are as follows: Asparagus \$1.25@2 per dozen bunches; eggs 28@35c per dozen; horseradish \$2@3.50 per bu; potatoes \$1.15@1.40; poultry 28@35c per pound; rhubarb 25@40c a dozen bunches; spinach 50c@\$1 per bushel.

THE JUNE HOG RUN.

What appeared to be the vanguard of the June run of hogs arrived at the markets last week. Combined supply at ten points increased 18 per cent and was considerably larger than the average for this season of the year. The price list was scaled down slightly but this was followed by a snappy recovery, again indicating that the June break will not be severe.

The discount on heavyweights is less than is usual at this time of year but the spread is beginning to widen and should increase considerably within the next two months.

The report on cold storage holdings of hog meats and lard on May 1 for the country as a whole, was more reassuring than for the six leading packing points. Stocks of hog meats were only 591,222,000 pounds as compared with 593,937,000 pounds a month previous. The six-year average on May 1 is 825,403,000 pounds. Lard stocks increased approximately 10,000,000 lbs. during April but the average increase in that month during the last six years has been 9,000,000 pounds and the supply on May 1 this year was only 95,882,000 pounds, compared with a six-year average of 113,400,000 pounds.

The breeding cattle population in the pastoral country was reduced below normal during the period of deflation. With financial conditions easier, range-men are endeavoring to rebuild their herds. Prices for breeding sows have advanced 25 to 50 per cent with a prospect that they will rise still further.

COMING SALES.

Herefords.—June 14, T. F. B. Sotham & Son, St. Clair, Mich.
Shorthorns.—June 21, H. C. Prescott & Sons, Tawas City, Mich.

Live Stock Market Service

Wednesday, May 31.

DETROIT

Cattle.

Receipts 510. Market steady.
Choice steers \$ 7.50@ 8.50
Handyweight butchers.... 8.00@ 8.75
Mixed steers and heifers 7.50@ 8.00
Handy light butchers.... 7.00@ 7.75
Light butchers 6.00@ 7.00
Best cows 5.50@ 6.25
Butcher cows 5.00@ 5.50
Common cows 3.75@ 4.50
Canners 2.50@ 3.75
Choice light bulls 5.50@ 5.75
Bologna bulls 4.50@ 5.25
Feeders 6.00@ 7.25
Stockers 5.50@ 6.50
Milkers and springers...\$ 45@ 75

Veal Calves.

Receipts 1194. Market 50c higher.
Best \$12.00@12.50
Others 6.00@11.50

Hogs.

Receipts 3187. Market 10c lower.
Pigs \$ 10.90
Mixed hogs 10.90
Roughs 8.85
Heavies 9.50@ 10.50

Sheep and Lambs.

Receipts 221. Market steady.
Best lambs \$ 13.00
Light to common 5.00@ 8.00
Fair to good sheep..... 6.00@ 6.50
Culls and common 1.50@ 3.00

CHICAGO

Hogs.

Estimated receipts today are 36,000; holdover 5,882. Market 15@20c lower. Bulk of sales \$10.15@10.75; tops at \$10.80; heavy 250 lbs up \$10.40@10.50; medium 200 to 250 lbs \$10.45@10.75; light 150 to 200 lbs at \$10.70@10.75; light lights 130 to 150 lbs at \$10.25@10.70; heavy packing sows 250 lbs up smooth \$9.35@9.75; packing sows 200 lbs rough \$5@9.40; pigs 130 lbs down medium \$9.25@10.30.

Cattle.

Estimated receipts today are 14,000. Market steady; canners and bulls are

lower. Beef steers medium and heavy weight 1100 lbs up \$8.70@9.25; do medium and good \$7.85@8.70; do common \$7.25@7.85; light weight 1100 lbs down \$8.40@9.25; do common and medium \$7.25@8.40; butcher cattle heifers at \$5.90@8.45; cows common at \$4.35@7.25; bulls bologna and beef \$4.10@6.35; canners and cutters cows and heifers \$3@4.25; do canner steers at \$4.75@6; veal calves light and handy-weight at \$8.50@10.50; feeder steers \$4@7.85; stocker steers \$5.75@7.75; stocker cows and heifers \$4.10@6.

Sheep and Lambs.

Estimated receipts today are 24,000. Fat lambs 25@50c lower; sheep steady to 25c lower. Lambs 84 lbs down \$10@15; do 85 lbs up \$9.75@15; do culls and common \$7.80@9.50; feeder lambs \$13.50@15; spring lambs \$8.25@10.85; ewes \$3.50@7; ewes cull and common \$1.50@3.50.

BUFFALO

Cattle.

Receipts 90 cars. Market 25c higher. Choice to prime shipping steers 1400 lbs and up \$8.75@ good to choice shipping steers \$8.25@8.50; light native yearlings good quality at \$8.75@9.25; best handy steers at \$8.25@8.50; handy steers and heifers \$7.75@8.25; light Michigan butchering heifers \$6.50@7.50; best fat cows \$5.50@6.50; cutters \$3@3.75; canners \$2@2.50; best heavy bulls \$4.75@5.50; heavy bologna bulls \$4.50@5; common bulls \$4@4.50; best feeders 700 to 800 lbs \$6.50@7.25; medium feeders \$6@6.50; stockers good \$5.50@6; light common \$4@5; best milkers and springers \$75@100; mediums \$35@50.
Calves, receipts 2,500; higher, with tops at \$13.

Hogs.

Receipts 90 cars. Market is steady. Heavy \$11.15@11.25; yorkers and pigs \$11.35@11.50.

Sheep and Lambs.

Receipts 15 cars. Market is slow. Top lambs \$15@16; yearlings at \$12@12.50; wethers \$7.50@8; ewes \$4.50@6.

WOOL MARKETS.

WOOL markets continue very firm and with a strong upward trend, according to advices to the State Farm Bureaus 1922 wool pool last week. There is an undenied scarcity of good wools. In face of a possible domestic consumption of 700,000,000 pounds of wool this year, the domestic clip promises not to exceed 250,000,000 pounds. Foreign wool markets are increasingly firm and have swung to the seller's favor. Reports from Buenos Aires, Argentina, dated May 24, state that continued heavy buying of coarse cross-bred wools was rapidly diminishing stocks of the only wools still available. On that market 21,000,000 pounds of coarse wools were sold in three weeks. American inquiries for choice wools met with disappointment. Only inferior Argentine wools were reported coming onto the markets now.

Speculators are very active throughout the United States. In Texas on May 24 they were reported to be buying wool on the sheep's backs at thirty-five to forty cents a pound, or about double what was paid last year. A large block of Texas wool sold at San Angelo on May 24 to eastern buyers at forty-five to fifty cents a pound. Michigan wool prices are following the general improvement in the wool market, according to the bureau, which is pooling Michigan wool in its third annual wool pool. The bureau is pooling and grading locally, making a cash advance of forty per cent to the wool growers. Considerable wool was reported coming into the bureau's central warehouse at Lansing.

WORLD'S DAIRY CONGRESS.

INVITATIONS have been issued by President Harding, acting under an authorization by congress, asking fifteen nations, colonies and commonwealths to send representatives to participate in the world's dairy congress, which is to be held in one of the leading cities in the United States in October of 1923. This will be the first international dairy meeting ever held in the United States. The plans on foot will make it the biggest and broadest meeting ever held anywhere.

BETTER STOCK INCREASES DEMAND FOR BETTER Sires.

MANY agencies are at work promoting better live stock. Perhaps no single agency is more potent in its influence than that large class of farmers and stockmen who have tried out pure-bred stock and found such stock better money-makers than grade animals. There is yet to be found a single instance where a farmer who has changed from grade or scrub sires to pure-breds has gone back to the old method. According to reports from the department of agriculture, 7,488 live stock owners have agreed to use pure-bred sires of good quality for all classes of animals kept on their farms. During April, of this year, 497 persons qualified in this campaign. This number is three times as great as in the corresponding period a year ago.

THE ELEVATOR EXCHANGE.

RELIABILITY and promptness continue to build business success for the history of the youthful farmer owned and controlled Michigan Elevator Exchange, the largest cooperative grain, hay and bean marketing association in the state, is to be considered. The Exchange has grown from twenty-three to 101 elevators since October, 1920. During the past eighteen months it has marketed more than \$6,000,000 worth of grain, hay and beans for its membership, according to an announcement made recently by the organization.

The Michigan Elevator Exchange is

one of the four great Michigan commodity marketing organizations affiliated with the State Farm Bureau. Started as a department of the Farm Bureau the Exchange has pursued the policy of complete and reliable service and prompt returns to farmer shippers. Early results of this policy soon enabled the Exchange to take its place among the big farm products marketing bodies in Michigan. Today the organization is widely known as the Michigan Cooperative Grain Marketing Organization which has 101 elevators coordinating their grain, hay and bean sales through a central sales office.

Last week the Exchange announced that the St. Joe Valley Shipping Association, with plants at Niles and Buchanan, has been added to the Exchange membership.

FILLED MILK LEGISLATION.

DO we want a federal law that will make it impossible to sell filled milk for real milk? The man who feeds dairy cattle and produces milk, cream and butter is anxious to keep the market for these products safe from the competition of colored and camouflaged cocoanut fat.

The mother, too, who is doing everything possible to keep her babies strong and healthy and to give them the best chance she can in this world, wants to be assured that when she buys the vital health and growth-producing fat that she is getting the real article and not the fats from the cocoanut tree in the South Sea Islands.

Already the states of New Jersey, Colorado, Utah, California, Wisconsin, Ohio, Oregon, Maryland and Kentucky have outlawed filled milk. The bill now before congress was passed this past week in the house by a very large majority. The senate is yet to consider it.

PACKERS AND STOCK YARDS ACT.

A RECENT decision by the United States Supreme Court clears away, it seems, all obstacles to the full endorsement of the packers' and stockyards' act, according to Secretary of Agriculture Wallace. The supreme court holds that commission merchants, traders and other people who operate in the yards come under the act.

INTERNATIONAL ALBUM.

THE 1921 edition of the International Review and Album is now ready for delivery. These handsome cloth-bound volumes may be had by addressing B. H. Heide, Secretary-Manager, International Live Stock Exposition, Chicago, and inclosing \$1.00, the price per volume.

FARM NOTES.

The Loan & Deposit Bank of Grand Ledge is financing a corn campaign in Eaton county, accepting the notes of farmers and boys who are unable to raise the necessary money to buy certified seed. The bank is cooperating with County Farm Agent R. W. Tenny.

Wisconsin potato growers can undersell Michigan producers in their own state, according to testimony given the Michigan Traffic League before the Michigan Public Utilities Commission, which is hearing charges presented against the present rate zoning system and high transportation charges.

Leelanau county fruit growers pooled their orders for nursery stock this spring. They recently received several thousand cherry trees for the pool,

besides many thousands of other kinds of fruit trees.

President David Friday, of M. A. C., has been elected chairman of the advisory committee which will have charge of the economic land survey to be initiated this summer in either Antrim or Benzie counties. State Commissioner of Agriculture John A. Doelle will direct the survey.

Ezra Levin has been appointed director of agricultural development by State Commissioner of Agriculture John A. Doelle. He has been connected with the department for some time.

Michigan Canned Food Company, of Detroit, with a number of factories in the state buying farm produce, has petitioned the court for dissolution. Its largest factories are at Owosso and Crosswell. Its plant at Greenville, while completed, has never been operated.

Sale of asparagus by weight and tip grade is being advocated in western Michigan where dealers have been retreating bunches purchased from farmers, into smaller ones and charging high prices for them. A dozen bunches have been made into fourteen and fifteen by this method.

The "baby chick" industry in the Holland-Zeeland-Jamestown territory in Ottawa county is expanding by leaps and bounds. Hatcheries at Holland shipped more than a million chickens this spring, almost entirely by parcels post, and into practically every state in the Union, without many casualties.

Ithaca is to become a more important dairy center. The Gratiot County Creamery Company has been organized there and \$6,000 worth of machinery installed. It may later be turned into a cooperative project.

John Kroboth has the reputation of having sold the largest beef animal ever marketed in Hartford in recent years. It was a three-year-old Holstein bull which tipped the beam at 2,445 pounds.

A. J. Hutchins, county farm agent of St. Joseph county, has resigned to become superintendent of Ceherville public schools. His resignation is effective September 1.

The Benzie county cherry pitting plant of the Grand Traverse Packing company will be located at Benzonia. The Case Lumber Company plant will be used and water will be taken from Cold creek.

ECONOMIC LAND SURVEY.

THE first economic land survey in Michigan will be conducted in Charlevoix county under the joint auspices of the State Department of Agriculture, the Michigan Agricultural College and the University of Michigan. Work will begin about June 1 and the field campaign will be under the direction of Prof. H. W. Stewart, of the University of Wisconsin.

Charlevoix county has been picked to start the survey because of the general diversified conditions found in the county. It has both good and poor farming lands, reforestation problems, and vast natural resources. The survey is to be a model and of such great importance that its promoters believe

the program will be readily sold to the next legislature.

The Michigan Agricultural College will have charge of all soil analysis work. Prof. Ernst Bessey, of the college, and Prof. L. H. Harvey, of Kalamazoo State Normal School, are to carry on the botanical work. Prof. L. J. Young, of the forestry department of the University will direct the forestry work.

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On trial. Easy running, easily cleaned. Skims warm or cold milk. Different from picture which shows larger capacity machines. Get our plan of easy **MONTHLY PAYMENTS** and handsome free catalog. Whether dairy is large or small, write today.

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Ship to Boston, which demands best quality and pays highest prices in the world. Express costs little more than local points. Ask your agent. Prompt returns. Write for weekly quotations. References Nat. Shawmut Bank, Dun or Bradstreet.

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Protect your hogs with TRENTON ROCK CRUDE OIL, the greatest natural panacea for scurvy and pox. I am a producer of this valuable product and sell on a money-back guarantee if not satisfactory. Write for details.

S. H. STAGGERS, Box 279, Redkey, Ind.

NATURAL LEAF TOBACCO: Chewing, 5 lb., \$1.50; 10 lb., \$1.50; 20 lb., \$1.50; smoking, 5 lb., \$1.25; 10 lb., \$2. Send no money. Pay when received. Tobacco Growers' Union, Paducah, Ky.

Homespun Smoking Tobacco Mild and Mellow—10 lbs. \$1.50; 20 lbs. \$2.75; delivery guaranteed. We furnish free recipe for preparing. Smoking Tobacco Exchange, Sedalia, Ky.

Homespun smoking or chewing TOBACCO. Collect on delivery: 5 lb., \$1.50; 10 lb., \$2.50; 20 lb., \$4. Farmers' Ass'n, Paducah, Ky.

Homespun Tobacco 3 lb., \$1; 10 lb., \$2.50. Received. FARMERS' ASS'N, Jonesboro, Ark.

10c BRINGS semi-monthly poultry paper, 3 months, summer trial. **POULTRY GUIDE,** Box D, Montpelier, Indiana

POULTRY

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From Select, Heavy Laying Hens in S. C. White and Brown Leghorns. Black Minorcas, Anconas, Banded Rocks and Rhode Island Reds.

JUNE PRICES

S. C. White and Brown Leghorns and Anconas, chicks \$5; 100, \$10.00; 500, \$47.50; Rocks, Reds and Minorcas, 50, \$6.50; 100, \$13.00; 500, \$62.50. Postpaid to your door and full live count GUARANTEED. Order from this ad. and save time. REFERENCE: ZIEGLER, LAND STATE BANK, Instructive Circular Free.

Colonial Poultry Farms, Zeeland, Mich.

WHITE LEGHORN BARGAINS Get famous Ferris White Leghorns and increase your poultry profits. Pedigreed, trapnested, egg bred for 22 years. Eggs—chicks—pullets—hens—males. Records to 313 eggs.

Shipped O.O.D., prepaid and on approval. Large, vigorous, Great winter layers. Send for FREE catalog and list of amazing bargains—FREE.

GEORGE B. FERRIS
3314 Union Ave., Grand Rapids, Mich.

Baby Chick Prices Slaughtered

English and American Leghorns now \$11.00 per 100 delivered. Anconas \$12.00. Rocks \$15.00. Our flocks cannot be beat for egg production. Our Anconas are Champions. Only one grade—the best. Special prices for larger orders. Catalogue free.

Progressive Poultry Farms, Box Q, Holland, Mich.

Original Dr. Heasley S. C. Buff Leghorn flock. Egg Basket Strain. Officially Certified Egg bred. Winners at Chicago, Cincinnati, etc. Cockerels breeding hens and chicks, at bargain prices. Also bred to lay English strains S. C. White Leghorn chicks for 1922. Discount on Early Orders. Hillside Hatchery Farm, R. 3, Holland, Mich. Successor to Henry DePre

RHODE ISLAND WHITES win over all breeds at the egg laying contest. 30 eggs \$5; 50 \$8; 100 \$15. Order from this ad. Some chicks.

H. H. JUMP, R. 5, Jackson, Mich.

S. C. Brown Leghorns, excellent layers Vigorous farm range. Selected eggs postpaid 15, \$1.25; 30, \$2.45; 50, \$4.00; 100, \$5.00. **Floyd Robertson, R. 1, Lexington, Ind.**

Top Quality Chicks Spanish, Minorcas, Rocks, Reds, Wyandottes, Orping, tons. **TYRONE POULTRY FARM,** Fenton, Mich.

STRICTS POULTRY FARM Hudsonville, Mich. R. R. 4, Box M. S. C. English White Leghorns. Official records from 9 hens of 208 to 244. Chicks and Eggs. Write for catalogue.

WHITE WYANDOTTES 207 egg average. Eggs all matings, \$2.00 per 15. \$10.00 per 100. Cockerels, hens and pullets \$5.00 each.

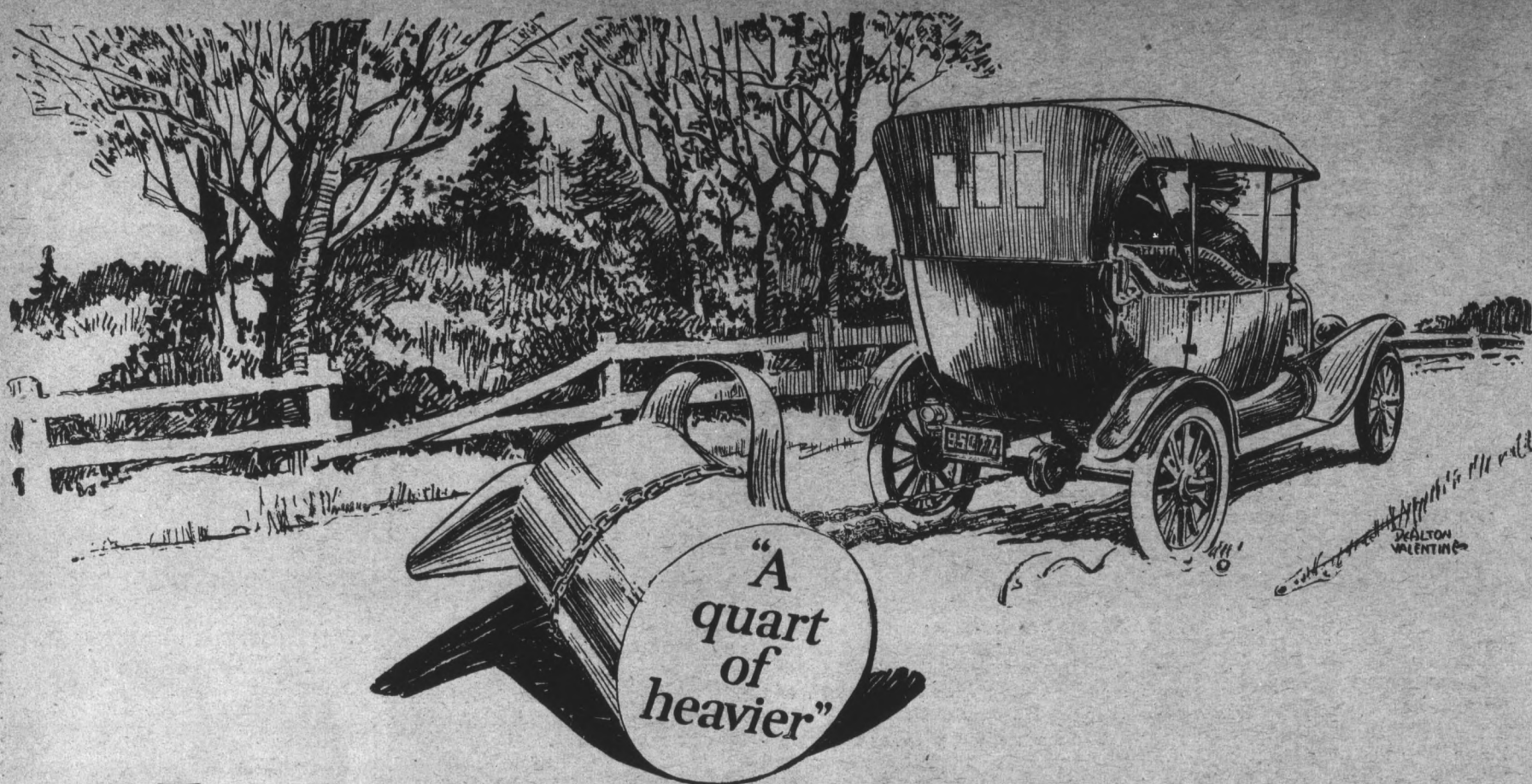
FRANK DELONG, R. 3, Three Rivers, Mich.

Bourbon Red Turkeys We have them. Order your Birds and Eggs now.

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Heavier oil than Gargoyle Mobiloil "E" in your Ford engine nearly always causes a drag on the engine. This means loss of power.

Heavier oil than Gargoyle Mobiloil "E" cannot begin so quickly to feed to every friction surface when the engine is started.

Heavier oil than Gargoyle Mobiloil "E" is not well adapted to the Ford splash system of lubrication.

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burn so freely from the ignition points of the spark plugs.

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Every mechanical factor and operating requirement of your Ford engine calls for oil of the body, character and quality of Gargoyle Mobiloil "E." No heavier or lighter oil can give such protection or such economy.

In the differential of your Ford use Gargoyle Mobiloil "CC" or Mobilubricant as specified by the Chart of Recommendations.

IN BUYING Gargoyle Mobiloil from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container.

The Vacuum Oil Company's Chart specifies the grade of Gargoyle Mobiloil for every make and model of car. Gargoyle Mobiloil "E" is the correct grade for Fords. If you drive another make of car, send for our booklet, "Correct Lubrication."



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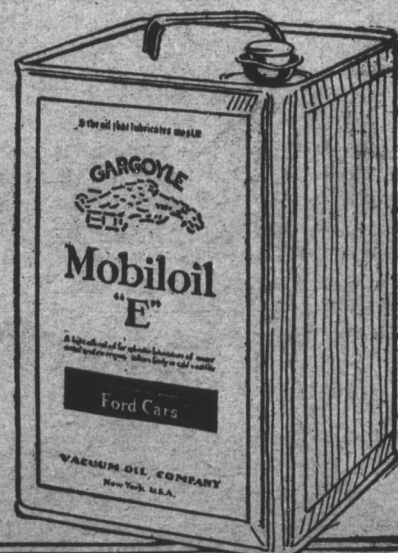
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