

MICHIGAN FARMER



A MERRY CHRISTMAS TO ALL

The Michigan Farmer

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Christmas, 1916

RELENTLESSLY the years roll round, indifferent to human joys and human tears.

The days about the winter solstice, which for ages the Caucasian race has given over to revelry and joy, to thoughts of good will and kindly deeds, unerringly appear in their place and with them all of the symbols suggestive of the usual jollity, though one-half of the race is groaning in sorrow and indescribable misery.

Even though the horrors of the European conflict are so far removed that we in no sense have responsible relations to them, yet the compassion of our common humanity calls for sympathy and what we can render of the helping hand, though it does not demand of us that we dwell in the dismal shadow of a sorrow that is not ours.

America is at peace and may well enter with zest into all of the joys of the Christmas season, therefore the spirit of the holiday design upon our front page.

Rubicund old St. Nicholas, or Kris Kringle, or Santa Claus, whichever term from old Teutonic folk-lore we may prefer to apply to His Highness, looks out through his wealth of holly leaves and berries and

"With the same merry grin
That's dimpled his chin
For the ages that's passed away."

The mantel with candle and clock and touch of bric-a-brac suggests the modern atmosphere of prosperity, education and culture, and we suspect that the candle and candlestick are more for ornament than use and that electricity lights the room, or else an acetylene tank could be found outside.

We are especially glad to note from the symbolism of the hanging stockings, that the entire family seems united and orthodox in its faith in Santa Claus, some of them even to the extent of both stockings. But above all and best of all, the row of hanging stockings indicates a happy family life guided by love and faith in one another, and the baby leads the procession.

A Merry Christmas to all is the hearty wish of the Michigan Farmer.

CURRENT COMMENT.

Crops and Crop Values.

The government estimate of the acreage, production and farm value of important farm crops for 1916, as compared with the previous year and the five-year average, again demonstrates the fact that a short crop always brings the farmers of the country more money than does a bumper crop. The farm value of the entire list of important crops, with but four exceptions, is shown by this estimate to be materially greater than

was the farm value of the same crops for last year. The aggregate increase in farm value for the important crops listed reaches a total of approximately a billion and three-quarters dollars.

Of course, this does not mean a net gain of this amount for the farmers of the country, because of the much higher prices prevailing for things which the farmers have to buy. But the economic law which makes short crops more valuable in the aggregate than bumper crops is in the end beneficial to consumers as well as producers. The higher prices which prevail for farm products under short crop conditions will stimulate production all along the line, giving the great body of consumers certain future relief from the conditions with which they are now confronted as a result of general crop shortage. If it were not for the operation of this economic law which gives short crops a higher total value than bumper crops, the economic situation would be most serious.

This law is equally beneficial in other ways, since through the stimulation of production the farmers become more liberal buyers of manufactured goods. This not only applies to equipment for crop production, but to all kinds of goods, since increased business activity resulting from increased income, always tends toward a higher standard of living with farmers as with other classes of business men. In the aggregate this increased domestic demand for manufactured goods of all kinds will have a stabilizing effect upon the commercial industries of the country which will go far toward counteracting any danger of a general business depression such as some pessimists are prophesying for the period following the cessation of hostilities in Europe.

The high cost of big crops which generally bring a small price is often quite as serious a problem to the average producer as is the high cost of living to the average consumer under present conditions. A more even adjustment of supply to demand would undoubtedly be better for both classes, and the economic law illustrated by the above statement of facts is perhaps the most powerful influence operating in that direction.

Under existing conditions, however, the farmers of the country are certain of a good market for next season's crops, even with bumper yields. This unprecedented opportunity for a merited harvest of profits for which they have waited long should be fully improved by every farmer. To this end let maximum crops at minimum cost of production be the motto for the coming year, which program means the adoption of up-to-date methods all along the line.

Our Beet Sugar Production.

An estimate based on preliminary returns from practically all operating beet sugar factories in the country, was recently made by the Bureau of Crop Estimates of the U. S. (Department of Agriculture). This shows the total area of beets harvested this year to be 680,000 acres with a total yield of 6,671,000 tons. This is the largest acreage and tonnage of beets ever harvested in the United States, and the sugar produced from the crop exceeds that of last year by more than 44,600 tons. The average sugar extraction this year was 13.8 per cent as compared with 14.21 per cent last year.

In all of the beet sugar producing states except Michigan and Ohio, the acreage was larger this year than last. In Michigan the estimated acreage for this year was 99,300 acres, as compared with 122,000 acres in 1915, and the tonnage was 604,000 tons as compared with 997,972 tons last year. The average farm price of sugar beets in the country for this year was \$6.17 per ton as compared with \$5.67 last year. The average farm price paid for beets in Michigan this year was \$6.06 per

ton as compared with \$5.91 per ton last year.

The total number of sugar factories in operation in the country for 1916 is 74 as compared with 67 factories operating in 1915. The number operating in Michigan was 15 for both years. During the last five years the annual consumption of sugar in the U. S. has approximated four million pounds, thus the beet sugar product is nearly one-fourth of the country's sugar consumption.

Secretary Houston's Report.

The annual report of the Secretary of Agriculture, made public last week, discusses the problem of the high cost of living in a most sane and intelligent manner. In this connection the secretary emphasizes the fact that more extensive educational methods and the general co-operation of farmers are needed. He is optimistic with reference to the ability of American farmers to not only supply the nation with food, but to meet an increasing proportion of the needs of the world. Note is made of the encouraging fact that while production per acre is much greater in Europe than in America, production per farmer is much larger in the United States than in any European country. This indicates that our farmers are far in advance in the important factors of personal energy and financial resource. They are, however, not as expert in the use of fertilizers and they do not practice the economies in small things that count.

The opportunity of our farmers is made plain by this comparison. By following the lead of the Department of Agriculture and other educational influences in the application of modern principles of agriculture, in judicious fertilization of the soil and the installation of improved equipment it can be best improved.

WHICH IS YOURS?

1Jan17—1Jan7—1Jan. Please notice on your name tab if any of these dates are at the right of your name. If they are it means that your paper will stop with the issue of December 30, following our inviolable rule to stop the paper at the expiration of the time for which a subscription has been paid. Those showing 1Jan. are trial subscribers, to whom we have been sending the paper a few months at a nominal price in order that they might judge of its value to them. To secure the paper regularly at present rates both trial and regular subscribers should renew at once, as all subscription prices will advance February 1, as advertised. Only prompt action will avoid missing one or more numbers, any one of which may easily be worth more to the reader than the cost of a year's subscription.

Present subscribers are offered the opportunity to protect themselves against coming advances in subscription rates by subscribing for three or five years if they desire.

Take immediate advantage of this present opportunity by renewing at once at 50 cents for one year, \$1.00 for three years, or \$1.50 for five years, by sending in your renewal at once.

Address all orders and make remittances to
THE MICHIGAN FARMER,
Detroit, Mich.

NOTICE.

The price of every daily, either in our club list or combinations offered at any time or in any way, will be advanced 50 cents on January 1. We can accept no orders which include a daily paper after December 31 at the price they are now quoted. Fifty cents must be added or the daily will be cut in time to correspond with the remittance.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The Teutons continue their drive in Roumania. Already they have occupied one-half of the territory of that kingdom, have taken the capital city and have crossed the Buzeu river. These successes bring the invading armies to the forest district in the northern part of the province of Wallachia, where the nature of the country lends itself to strong defensive operations and where it is expected that the Roumanians and Russians will make a firm stand. Snows in the Carpathian mountains and muddy roads in the valleys and lowlands are hampering the movement of troops and probably will soon cause the abandonment of further undertakings this winter.—Russia reports the repulse of two German attacks near Kovel.—Only artillery and patrol activity are reported on the Macedonian and Italian fronts.—Late last week the French attacked the German lines near Verdun and succeeded in recovering practically all of the remaining territory occupied by the French previous to the German drive last February. At about the same time the Germans hurled a violent attack to the west of Verdun at a point in the line nearest the city of Paris. The French were prepared for this assault and successfully repulsed it as they also did later attacks made at the same place. English troops endeavored to enter the enemy trenches north of Ancre about nine miles from Thiepval, but the undertaking failed, according to a German statement.

The peace proposal made by German Chancellor Hollweg last week has resulted in a great deal of comment in neutral countries and by the entente allies themselves. Notwithstanding the fact that the allies are in the poorest possible military situation at the present time to consider terms of peace, an opinion seems to prevail that to maintain the respect of the neutral nations it seems necessary to give the terms offered by Germany consideration. It is now suggested and expected that a peace parley will be opened at The Hague about the middle of January, where a conference of representatives of all the belligerents will be held for the purpose of making peace proposals. Military operations will in all probability continue during the proposed session.

A shortage of coal in Italy has caused rail road traffic to be suspended almost entirely except for military purposes. The government has been compelled to withdraw over 1,500 trains a day because it cannot get coal for the engines. Many cities and towns are without electric light and gas, and kerosene oil is also very scarce.

In a manifesto issued by Gen. Villa before he retired from Chihuahua city, he expressed his bitterness toward the Americans and declared that no foreigner should be allowed to own land in Mexico until he had resided there 25 years.

The Austrian Emperor has named his new cabinet, with Alexander Spitzmueller as premier.

The first meeting of the Polish National Council will be held before Christmas, while the initial meeting of the national assembly will occur in February.

National.

A communication has been received from Gen. Carranza, of Mexico, touching upon the protocol agreed upon by representatives of the United States and Mexico recently at Atlantic City. This communication is to be submitted to the commissioners this week.

Federal District Attorney Kinnane opens an inquiry into the cause for high food prices, in the city of Detroit, this week. A federal grand jury was called Monday for this purpose. It is expected the investigation will last a week or ten days, and witnesses will not have an opportunity to warn others of the character of the inquiry.

The high prices being paid for paper has resulted in a general crusade by collectors for waste paper, which returns them substantial financial rewards for their industry. School children have also found it a means of obtaining pin money, both for themselves and to secure funds for the purchase of needs for the schoolroom. In Detroit, Philadelphia, and other large cities, almost the entire school population has been interested in the project.

ANOTHER CLUBBING BARGAIN.

No. 21.

Michigan Farmer, 3 yrs., wky. . . . \$1.25
Any Gd. Rapids or Detroit Daily,
(except Detroit News) . . . \$2.00, \$3.00
Woman's World, mo. 35
Home Life, mo. 25
Poultry Advocate, mo. 50

Regular price \$5.35
OUR PRICE ONLY \$2.25.

Building Up a Run-Down Farm

By W. F. TAYLOR

SOME time ago, in conversation with a friend, I remarked that with prices of real estate so high, and still going up, it would be no easy matter for our young men to get homes of their own in the country. "There is still one way," he said, "let them buy a run-down farm and build it up."

Looking at the matter as broadly as I am able, I am disposed to agree that this plan has something in it for the man of small means who wishes to buy a farm. But the buying of a farm that has become unproductive for any cause involves a risk. The outcome of such a venture will depend upon the answer to several questions—what is the matter with the farm? Why does it not produce as well as the farms around it? What does the prospective buyer know about soil handling? How much capital has he, and will he have any money left after paying for the farm? How much will the improvements which must be made at once, cost? And so on and on, though with these questions answered one should be able to judge pretty well whether or not the young man would be safe in attempting a venture of this sort.

But there are well worn farms that are not for sale. Their owners expect to live on them and take what they can get from year to year, and the problem of the poor farm appeals to them as truly and as forcefully as to the young man who has invested his money in such an estate with the dream of bettering it and by and by making it as good and productive as the other farms in the community.

Common Soil Troubles.

There are many causes why lands do not produce well, and we shall probably not consider even the greater number of them. It is our purpose to discuss the more common troubles of this kind in just as practical a way as possible in the hope that some reader of this paper, with a farm that produces less instead of more as the years go by, may take courage, and may see his way clear to better methods of soil management.

Many Michigan farms need drainage. Drainage is a matter that we put off from year to year, because we have neglected it in the past and grown fair crops.

But oftener we fail to tile our fields because we simply can not get time to do it. We do all we can from day to day, we invest our labor in the doing of things that simply can not wait, and often it is almost more than we can do, to find time for these things. We hire what we can get in the way of labor, providing the price is not beyond us. I imagine that but few people realize how hard it is to get labor on the farms of Michigan now, unless they live in the country and have experienced the difficulty.

There are some farms that no longer produce paying crops, where drainage must be resorted to before there can be any permanent improvement. There are many others where it can wait until other conditions are remedied, and there are farms that are naturally drained to such an extent that it will be a long time before tiling will pay for the expense of labor and tile.

Organic Matter an Almost Universal Need.

About nine-tenths of the unproductive farms in Michigan need organic matter. For a time while they were new they produced well, but gradually the yields grew less and less, the trouble of getting a stand of clover grew greater, and by and by the sowing of clover was given up, because seed was so high, and the securing of a stand was so doubtful.

Most of our sandy soils need lime and in many cases they simply must have it before good crops of clover can be grown.

Practically all unproductive soils that have ever grown crops need nitrogen. Nitrogen is soonest exhausted because it results from the decaying of organic matter and when organic matter fails, nitrogen fails.

The mineral elements of plant food do not so soon leave the soil because they do not become soluble in large quantities at one time and so they can not as readily get away. But while they are not soluble in water, they are of little use to us as plant food.

Mineral plant food becomes available as the processes of decay progress with the organic matter, and if there is not a goodly supply of it, these agencies of nature do not work to an extent sufficient to render enough of the mineral elements available for food for the plants and so our neglectful soil lacks practically everything that our crops need, and largely because of the need of more organic matter.

Now I am not saying that some soils do not need applications of potash or phosphoric acid. When prices of these elements of plant food are normal, it often pays to buy them and apply them to the soil in considerable quantities. I do not say that under the exceeding high prices that prevail at present, it will not pay in some cases to buy commercial fertilizer, but it is certain that no man can buy fertilizer at present prices and with it bring

the soil for acidity and if it is present we should apply lime.

Marl will Serve as a Soil Amendment.

Michigan is rich in her deposits of marl. I have traveled pretty well over the state, and often in institutes when this question of lime has been raised I have asked, "Who knows of any deposits of marl in this vicinity?" In most cases it has been found that deposits of marl were so rich and so near that it was not worth while to discuss ground lime rock, hydrated lime, or any other carrier of calcium.

Twice I have ordered lime for myself and my neighbors, paying freight on it over hundreds of miles of railroad. Then it came to my knowledge that we had plenty of marl ten or twelve miles distant. This seemed almost too far to haul, and we were considering the advisability of buying more limestone finely ground, when it became a matter of common knowledge that we had marl in abundance only three or four miles from our home.

A lot of it was drawn last winter, and soon a bridge will be built across a creek which will shorten the distance for a number of us, and then I look for many tons to be hauled and spread on the fields. In each case that has come under my observation where lime has been applied, the labor has brought its reward. We have been wont to associate lime with alfalfa, and this is right, for lime is often necessary before we can get a stand of this truly valuable crop; but lime is

spots, but it is doubtful if even for this purpose such use would be profitable.

Combination Hog House and Granary.

We have a building which we wish to use as a granary. Building is about six feet above the ground. Would it in any way damage the grain to make a hog house in basement?

Genesee Co.

E. E. C.

The hog house under a granary might or might not interfere with the usefulness of the building, depending largely upon the thoroughness with which the basement is ventilated. If the King system of ventilation is provided, there will be a little more tendency toward the accumulation of dampness in the basement than is the case in basement barns where live stock is housed, over which granaries are everywhere used successfully. On the other hand, if little or no ventilation is provided there is a possibility that an accumulation of moisture in the basement would have a deleterious effect upon the grain stored above. If ideal housing conditions are provided for the hogs, this would be a safe experiment.

Seeding Sandy Land to Clover.

I have an eight-acre field which I want to sow to oats in the spring. This piece of land is a sandy loam and in a fair state of fertility, having been covered with manure in the last two years. It produced a good crop of corn this year. I want to get this field seeded to clover, no clover having been grown on it for the last six years. How would you advise sowing the clover to insure a catch? Would you inoculate the seed? I have clover chaff from about 25 loads of clover seed. Could this be used to inoculate by spreading on the field after it is plowed and worked in the soil with a harrow?

Jackson Co.

A. J. M.

While there may be cases in which a clover seeding would be benefited by inoculation, this is not as necessary with a crop like red clover, which has been commonly grown on our Michigan soils for many years, as with alfalfa, which is a new plant to most Michigan soils. In the writer's opinion, inoculation of clover seed will not insure a good stand of clover on land where clover does not grow readily under present conditions.

The thing which is most apt to be needed under these conditions is a liberal application of lime to neutralize soil acidity and place the soil in a condition to be a suitable home for the nitrifying bacteria for which clover is a host plant. Given these ideal conditions, then inoculation might prove beneficial, but lacking them will prove of no value at all, and there seems to be sufficient bacteria in practically all Michigan soils to provide adequate inoculation where soil conditions favor such multiplication.

Under the conditions cited in this inquiry, the best way to insure a good clover seeding would be to apply a liberal coat of lime, preferably this fall if ground limestone is to be used. Then prepare the soil without plowing as early in the spring as same can be worked and sow about one bushel of oats per acre, using a liberal application of phosphorus. The application of lime will insure better inoculation of the clover, preparation of a good firm seed bed without plowing will give the clover the best possible chances for an early start, the sowing of only one bushel of oats per acre will give the clover more room to develop and a more certain moisture supply without cutting the oat yield to a very marked degree, and the fertilizer will prove beneficial to both the stand of clover and the yield of oats.

CORRECTIONS.

In the article on "Trapping the Muskrat," which appeared on page 462 of the November 11 issue of this journal, the author has called our attention to two errors. In the eleventh paragraph where the article reads, "The trap should be placed as far out in the stream as possible to insure drowning," the word "staked" should be substituted for "placed." In the following paragraph where reference is made to using traps in the burrows leading to the houses in the bank, only the "Stop-thief" type of trap should be employed for this purpose.

FARM NOTES.

Soft Coal Ashes for the Soil.

Would like to know if it does any hurt or any good to put soft coal ashes on the land? I would like to know through your paper.

Genesee Co.

C. L.

Soft coal ashes contain very little in the way of soluble plant food, and are consequently of little value as a fertilizer or soil amendment. Some mechanical benefit might result from their application to very hard clay



Drawing on the Farm Woodlot for Building Material.

up a run-down farm, unless he uses it to grow crops of some kind to be plowed into the soil.

Clover an Important Factor in Soil Building.

On some of these farms a good stand of clover may be gotten at once by proper attention to the matter in hand. In such cases the way is easy for of all the plants that have been given to man by the Great Master of the universe, few are more important or promise greater results than old-fashioned red clover.

But on most poor farms, it is hard to get a catch of clover. Dozens of times when I have advised men to grow clover, they have fired back the request, "Tell us how to get a stand. We know all about what the clover crop will do for us, but how are we going to get it?" If we tell them to put barnyard manure on the fields, they will inquire, "Where are we to get that?" and often I fear we leave these men with little more courage and little more real knowledge than they had before "The Institute Speaker" came into their midst.

Clover should be gotten on the run-down farm at the earliest possible moment. If efforts in the past to get a good stand have failed we should test

just as necessary to best results in growing red clover on acid soil, unless we have large quantities of stable manure and apply it generously, as it is in getting a stand of alfalfa. If we have a bed of marl near by, we can do no better than to spend every spare day in winter, when roads are passable, in hauling marl until our fields are covered.

Like clover, vetch is a nitrogen gatherer and it also grows well on some soils that do not readily respond to a seeding of clover. Vetch tolerates more acid than clover, hence lime is not as essential. Vetch sown in corn at the last cultivation will come on and make a fine crop to turn under in the spring if conditions are favorable.

The Good Roads Problem

By J. A. KAISER

THE good roads movement is now fairly launched in Michigan, but the good roads problem assumes each year, more perplexing aspects. The first great essential, an awakened interest in the movement, is now a reality. The solution of the problem as to methods and kind of material, is, as yet, in its initial stages. Permanent road improvement must be made. This, the automobile has made imperative. Shall these roads be gravel or stone or a combination of both? Must the crushed stone road be built with some sort of binder to hold the top-dressing in place? If so, what material is best for this? Is the county system of road building best? What progress has been made under the township system? How about the contract method? These are some of the questions to be asked and answered in solving the good roads problem.

Some Pioneer Results.

In the writer's section permanent road improvement is no longer in its infancy. The pioneers in this work are to be found in the writer's own township. This township, Fayette, now possesses 12 miles of state reward, macadam highway, constructed entirely under the township system. Other localities near at hand, have made almost as much progress. Nevertheless, the problem is not, in Fayette township or in any other, wholly solved. These road builders mentioned are enthusiastic over the township system. They think from experience, that it is best. In other sections, just as enthusiastic supporters of the county system may be found.

Time is an Important Factor.

But like all new movements, time is necessarily an important factor in the determination of the wisdom of certain fundamental points. Time is proving in Fayette and in other localities, that certain alterations must be made in the method of stone road construction. Taken as a whole, the macadam road built in this section, is everlasting. But the top-dressing which makes the road desirable, is not standing the test. Either the method of construction must be altered, or a binder of some kind must be used. The fine crushed stone on the surface is sucked up by the tires of the rapidly driven automobiles, washed by heavy rains, and blown away by high winds. On main traveled roads the wear and tear from countless automobiles is something terrific. The problem is to find something that will stand the strain. In its main features the crushed stone road is a success. To do away with the necessity of too frequent repairing, however, new methods in construction must be introduced.

Availability of Material Must be Considered.

In considering this question, the old argument of the stone vs. the gravel road comes up. As the writer has said in a former article, the merits of these two kinds of highway must be determined largely in the light of availability of material. Number one gravel makes an excellent road, but in many localities there is no such thing as number one gravel. Where stone is plentiful as is the case in many parts of southern Michigan this is the cheapest material and the best. The stone road will some day be perfected. It takes time to do these things.

A New Type of Road Evolved.

In the light of recent unsatisfactory developments, a road new in this section, is being constructed. This consists of a combination of crushed stone and gravel. One of the most conspicuous examples of this new kind of road may be found in Quincy township, Branch county. In this township a mile of this road has been completed. At the beginning the ordinary

crushed stone road-bed was built. After the crushed stone which forms the foundation had been placed the road was left in its partially completed state for several months, to permit complete settling through travel and action of the elements. Then a filler of gravel was introduced, the work was again suspended for a time, and finally a top-dressing of gravel eight inches thick was added. In this road we have the indestructible macadam road bed with a finish coat such as is given to the gravel road.

Advantages of a Combination of Materials.

The combination stone-gravel road just described has two things in its favor: First, it solves the problem of a more satisfactory top-dressing for the macadam road; and second, it gives a chance for the use in localities where it is plentiful, of stone for the major portion of the construction, while making the road, so far as the traveler is concerned, essentially a gravel one. Auto drivers as a rule, prefer this gravel to stone. The combination construction would seem to come somewhere near the solution of some of the more perplexing points. Good gravel enough for the finishing coat, may often be found in localities where it does not exist in sufficient quantities for complete road construction. But more important than this is the face of the rock bed which underlies the gravel. In reality, the combination furnishes a crushed stone road, with its less desirable features eliminated.

Experience Must Guide Progress.

The foregoing facts mark the progress that has been made in permanent road improvement. The last word in Michigan road building will not be said for many a year to come. Mistakes may be made, mistakes must be made, as is the case with every great movement. But, after all, the great essential fact is that the movement is going forward. It is as irresistible as the progress of the seasons. Localities comparatively poor and with many miles of deplorable highway, may take heart from the two million dollars which falls to Michigan, as a result of the good roads act passed by congress. According to good authority, this money will be used in assisting these localities to build roads without incurring debts that could not be lifted in generations. All good things come at last, to those who wish them and wait for them and work for them.

Editor's Note.—Through an error in make-up the title of the above article appeared at the head of an article on Advertising Farm Products, in the issue of December 16.

FARM EFFICIENCY.

By the term Farm Efficiency, we mean a system of farming in which the desired effect is attained, whether it be from grain farming, live stock farming or fruit farming. The aim of our farmers is to produce sufficient from their farms so that they may be a profitable investment for them, and at the same time maintain the fertility of their farms as the wide-awake farmer can see the folly of robbing his land.

We have learned from our association with the farmers of this country that there are very few of them who run their farms on a business basis. Every farmer should know just what it costs him to raise everything that he produces. He should know what every bushel of grain costs him, what every ton of hay costs him and every head of live stock that he raises. This can be done very handily by keeping a record. Such a record is worth much to any farmer and it is necessary for some farmers if they would be successful as we know that there are many

farmers that are producing some of their products at a loss and do not know it, and this is the only method by which they can determine this fact. We know that there are some farmers who are making handsome profits on some things that they produce and losing it on some other things. The farmer that has a system of farm accounting for his farm operations will soon see where the leak is taking place and then he will be in a position to remedy this defect.

The progressive farmer is going to find out just how his farm is paying him. Thus he can discontinue anything that is not profitable for him. Two men on the same kind of soil and in the same season will obtain very different results in the same year. This was very forcibly brought to our attention during the past few weeks during a canvas by a farm management demonstrator, who was taking records in the section of the state where we reside. These records were for last year and were taken by the same man and under the same system and it showed that the one man had made about \$3,500 on his farm of 160 acres while the other farmer on an equally as good farm of 80 acres in the same section lost over \$400.

One of these farmers will be dissatisfied and say that there is no money in farming, that the markets are no good, that hired help is too expensive, and yet his neighbor made a handsome profit from his year's work, while he worked at a loss. We say that the fault here is with the farmer himself and that nothing but an application of business principles to his farming will help him out of his difficulty. The farmer that is making money is always to be found at the agricultural meetings and farmers' gatherings, seated well up in front, trying to get some new information, while the fellow that is not doing so well does not attend, as he is afraid that he will be criticized for his poor showing, and so he goes along year after year. We should all profit from the mistakes of others. Their failures should be our warning signals and our danger signs.

Another thing that has been overlooked by many farmers is the relation of live stock to grain farming. This opens a new field for many farmers, as food animals are high at the present time and pure-bred animals are in great demand. This also offers a valuable method for maintaining the fertility of the soil from the use of manure. We believe that the live stock industry will flourish for years to come and the farmer that devotes his energy to live stock farming has a bright future ahead of him.

Ohio.

G. H. CONN.

SAVE THE TREES.

There is a world of sentiment, wonderful and grand, in that old poem beginning, "Woodman, spare that tree." And time was when only the sentiment intervened to save the tree. Now there is another story to tell. Such a poem might be written today with a different embodiment altogether. The dollar mark in some form might well constitute the main thought of such a poem. And if it did I feel sure this poem would meet with a heartier and fuller appreciation than the old. The practical dollars and cents side of a thing is something all of us can understand. The ability that we have to realize what the money value of a tree is should induce us to spare the tree until it is large enough to be marketable. Then, "Good-by, poor old sentiment."

Many farms have no timber at all. The money outlay on those for posts, building timbers and such is almost ruinous. But most farms still have woodlots and woods pastures. And no farm can well afford to be without them. We ought to be thankful enough that this little mite of the great timber treasure has been saved to use our every energy and our best efforts to

make the most of what is left. We should give to the woodlot the same painstaking care and attention that we give to the crops, the stock or any other branch of the farming business. But do we?

I saw one farmer cutting healthy, young trees and saving the large trees to sell. Why not reverse the order? If the large trees are cut now and the young ones left to grow we might hope to have timber for always.

Again, I see a man going through the woodlot and picking out only the large trees which show signs of failing, such as dead limbs in the top, and cutting those only. This would seem to be real economy. And it is, as far as it goes, for by doing so only those trees which are done growing are cut. All healthy, young trees which are growing into money fast might be left to draw on in the future. But again—there's the rub! This man felled the large, valuable trees carelessly, haphazardly and in such a way that dozens of smaller trees were destroyed with each one felled. Good farming that—about as good as killing a few pigs every time you feed the sow. And more, those large tree tops were allowed to lie and rot where they fell and take up ground that should be filled with young growing stock. If I followed such methods in the corn field I shouldn't expect much corn per acre.

And yet again, some woodlots are cared for by letting them care for themselves. "Twon't never get no cheaper," one of my neighbors told me, "So I jest let it grow." This one had several large, valuable white oaks which were perfectly good but showed signs of beginning to fail. If the owner cuts a few sometime in the future and finds the heart of them so dozy and black that they are unsalable he may change his mind about timber getting no cheaper.

This same lot was a veritable thick- et. All sorts of timber straggling and fighting for room. And it seemed that of the real young stuff only the worthless varieties were doing well. Young dog-woods, black-gum, beech, birch, water-oak and even willows were crowding out such valuable timbers as white oak, yellow poplar, wild cherry and hickory. Then in summer this woodlot, promising and valuable as it was, and is, was ravaged by all sorts and sizes of cattle and hogs. They ate the leaves and smashed the young sprouts that might some day be large, valuable trees.

I have seen the owner of this woodlot thinning his corn by pulling up all small and weak plants, and even large, thrifty stalks in some places so that he might increase the yield. And I almost wondered why he didn't use the same good judgment in caring for his timber, or else turn his stock into the corn field when the corn was about knee high so as to be consistent throughout.

Much clearing will be done this winter. This gives good winter occupation and it is time well spent for one who has too much timber and not enough farming land. But, can you imagine what the future holds for the man who clears the "last patch" now for the few ears of corn the ground will produce next summer?

Indiana.

E. G.

ANNUAL MEETING MICHIGAN EXPERIMENT ASSOCIATION.

The Sixth Annual Meeting and Seed Exhibition of the Michigan Experiment Association will be held at East Lansing, beginning on Monday, afternoon, January 15, and continuing through Tuesday evening, January 16, 1917, immediately preceding the annual meeting of the Michigan Live Stock Breeders' Association. All members and others interested in crop improvement are invited to attend. All local associations are asked to send at least two delegates. An interesting program and attractive premium list have been prepared and may be secured by addressing the Secretary, V. H. Shoemith, East Lansing, Mich.

Stock Breeding Hints IV.

By N. A. CLAPP

IN stock breeding we find that there are some things which are noticeable all along the line from the time we begin in early life until we have passed the meridian of life and feel that we are pretty well versed in the art. It is very much like learning the A. B. C.'s of language and, no matter how far we progress in building up rich vocabularies, we have the same elementals to use and some of the same tendencies with which to contend.

In stock breeding we say that there is a natural tendency to variations. No product of two parents is just like either parent. At first we stagger and wonder at such results, but when we have developed our reasoning faculties we can see why. In the first place the ancestral influences are not the same because from both the paternal and maternal branches reach out in different directions, and we ought not to expect reproduction of either. That part of the problem is easily disposed of, but when, by coupling the same parents we produce large families, no two of which are alike, having only what we call a family resemblance, we are confronted by one of nature's strongest tendencies, which we call variation. Strive as best we may, or can, we find that the life of an individual, or several successive generations, is not long enough to overcome this tendency. All we can do is to see what

where the best kinds of foods grow luxuriously and in abundance, producing frame and meat, and wool (1000 fibers to the square inch), in liberal quantities. Under domestication, the meat for food and wool for clothing, makes the sheep one of the best, if not the most useful of the domestic animals kept on the farms as a contributor to the needs of humanity.

The hog, most economical of meat producers, was descended from the same ancestors as the hippopotamus, an animal which after varying from the original line, became amphibious and has been a dweller in lakes and swampy regions where he retains his hoggish characteristics of eating large quantities of food and growing to great proportions. Sometimes a single animal weighs several tons, and yet the meat retains the excellent toothsome flavor and quality which is relished by humans who are able to capture and utilize him as food.

Influence of Varying Conditions.

In our own country there are practical illustrations as to what changed conditions will bring about in some of our domestic animals. Our breeds of animals have been built up by following variations. Improved conditions, including food and care, have secured for us improved animals. If some of the best specimens of our beef cattle were to be exposed to the rigors of New England winters, and compelled

shortened, earlier maturity is encouraged, and a better quality of meat is secured.

It is not necessary for us to go out of our own country for fresh blood with which to improve our stock; we have the best material that can be found, and it has been produced here in America under our conditions which does not produce any check in growth by any process of adaptation.

Variations on Our Farms.

There are great differences in the character of the stock of the same breed raised on the same farm. Some will be more comely and more symmetrical in form than others carrying the same blood and raised under the same conditions. These superior characteristics we cannot account for, and yet we prize them highly, and by selecting such as the breeding herd find that they transmit their superior form and tendencies to their progeny. By breeding from the best a type is often secured which becomes a distinguishing characteristic of the herd. Some breeders have built up excellent herds by following these come-by-chance variations, and have won an enviable reputation for establishing a superior type of animals. A phenomenal animal, especially if it is a male, may represent the possibilities of great improvements and enhanced values for much of the stock raised in the same herd.

On the other hand, some are so unwise as to place too high a value on the animals of the same blood as the superior ones, and have not secured the desired results. There is only one greatest and best in a generation

hood, married, and in after years it was found that there were a large number of children with five fingers and a thumb on each hand among his descendants.

Among animals carrying two colors we find it an easy matter to follow one color and make it predominant, almost to the exclusion of the other. The case of the Poland China hogs is an example. For many years fashion led to the dark colors almost to the exclusion of the white. Someone had a pig that was spotted or nearly white, like some of his remote ancestors. The freak was followed and we have now what is called the new breed "Big Spotted Poland Chinas."

By following freaks the different breeds of Plymouth Rock hens were produced—the White and the Reds came from the descendants of the old Dominique or black and white penciled Rocks, which have been popular as farmer's hens for fifty years. The different breeds of Wyandottes all descended from the old Silver Penciled Wyandottes.

The subject of variations has attracted the attention and consideration of some of the most profound investigators and students of the laws of nature, and much valuable information has been brought to common, practical breeders for their consideration. But the prominent and so-called wise ones need not be given the entire field for observation. There are ample opportunities for observation in every farmyard, where considerable numbers of live stock of all kinds are bred and raised, to discover important facts, which, if heeded, can be cherished in mind and utilized with profit.

To the lover of live stock the story of what has been accomplished by following variations has a greater charm than a richly embellished romance, built on the highest flights of fancy. The practical breeder who has keenness of perception and properly follows variations in his live stock as he proceeds, gathers a rich reward along the way, and has the consolation of knowing that he has helped to elevate to a higher level the kind of stock with which he operates. While he is financially benefited he can realize that he is a public benefactor.

MICHIGAN EXHIBITS AT THE INTERNATIONAL.

Michigan was well represented by breeders in many classes at the recent International. Shorthorn cattle were shown by George J. Dickison & Sons, Sault Ste Marie; Angus by U. L. Clark, Hunters Creek, and Woodcote Stock Farm, of Ionia; Herefords by R. L. Calhoun, Bronson, and E. J. Taylor, Fremont. Cotswold, Lincoln and Southdown sheep by Harry T. Crandell, of Cass City. Poland China swine by Bean Creek Farm, Hudson; Chester Whites by Adams Bros., Litchfield, and Harry Crandell; Duroc Jerseys by H. W. Mumford, Ann Arbor; Tamworths by Adams Bros. Grade and cross-bred fat hogs, Adams Bros., and Harry T. Crandell. Percheron horses by B. F. Anderson, Adrian, and L. E. Edson, of Paw Paw; Belgians by E. LeRoy Pelletier, Orchard Lake.

The Michigan entries made a good showing in all classes and took down a liberal share of the prize money.

BREEDERS' MEETINGS AT THE INTERNATIONAL.

American Rambouillet Sheep Breeders' Association.

The principal business of the meeting which brought the usual attendance, was the election of officers for the ensuing year as follows: President, Frank King, Laramie, Wyo.; vice-president, Frank Cook, Belle Fourche, S. D.; secretary, Dwight Lincoln, Marysville, Ohio; treasurer, John Webb, of Southport, Ind. Directors: John Seely, Mt. Pleasant, Utah; L. W. Shaw, Pottersburg, Ohio, and Alex. Orth, Ada, Ohio.

American Hampshire Sheep Association.

Officers of this organization were

(Continued on page 628).



The Grand Champion Carload of Fat Steers at the International Live Stock Exposition.

we can do by following the natural tendencies. Let us, then, consider what has been and may be accomplished by following

Variations.

Varying characteristics and varying conditions under which animals are produced and reared, are matters with which the breeders have to deal, whether it is the boy with his pet rabbits, chickens or guinea pigs, or the mature and skillful master breeder of horses, sheep, cattle or hogs. The skillful breeder has long since discovered that the variations toward improved characteristics are the objects for which he is seeking in order to keep abreast with his competitors, or secure the reward which is his if he can produce something superior to the product of their skill.

Changing conditions have wrought wonders among animals under nature's hands. Descending from the same ancestry the prehistoric horse was produced, while his near relatives under varying conditions grew into the zebra and the ass. The many kinds of sheep descended from the same original forms, producing all the representatives of the great family from the almost woolless specimens, found in the arid regions of the tropics, to the natives developed under the rigorous conditions of the temperate zone

to gather their food on the steep hillsides of that country in the summer, the general conformation would be changed and the character of the animals would be changed from distinctively meat and fat accumulating animals to a type that would resist hardships; from one that was once an early developer to one of slow growth and late maturity. After a few successive generations the general character of the animals would be so changed that they would hardly be recognized as one of the same breed as the stock from which they were descended.

On the other hand, when specimens of any of the beef breeds are taken into southern Michigan or any of the states of the middle west, and placed under the best conditions that can be secured there, there will be signs of marked improvement in a short period of time. The great abundance of a great variety of forage feeds in winter and a great variety of clovers and tame grasses in summer meets the needs of the animals and they show its beneficial effects. The liberal supply of a variety of grains is freely used, which is more nutritious than the grasses and different kinds of hay found in their native country, England. Our grains and forage crops more than equal the grasses and root crops in England, and the period of growth is

which has the greatest merit in form and capabilities to transmit their own superior characteristics to their progeny. Swine breeders have often made great mistakes by placing too great values on litter mates of a phenomenal animal. The reasons why one animal is capable of making a great leap ahead, and maintaining a high level by transmitting his superior qualities to his progeny, I haven't heard explained. The fact remains, and breeders who are fortunate enough to recognize and will utilize the phenomenal animals that may come within their reach, have the possibilities of success before them. The man who neglects to grasp the favorable opportunity when within his reach, must fail, if he undertakes to keep abreast with the foremost among the breeders.

Following Freaks and Sports.

There is a field for diversion, and sometimes profit, in following natural freaks and sports. Nature rarely works by exact rules when reproducing things of the same kind, whether it is with plants or animals. Sometimes something vastly different than the parent stock appears and, if bred, reproduces the defect or freak.

Proctor, in his excellent work on heredity, mentions the case of a male child that had five fingers and a thumb on each hand. The boy grew to man-

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Annual Meeting of Fruit Growers

(Continued from last week.)

THE Wednesday afternoon session was opened with a very interesting and instructive talk by Mr. Bassett on "Marketing Problems." Mr. Bassett is really the government's expert on solving marketing problems for the farmer, and his talk, which was the result of his vast experience in this line, had some very valuable suggestions. One of the points he brought out which the fruit grower seldom thinks of, is that the consumer of our farm products, especially fruit, must be satisfied, otherwise he ceases to be our customer. In the future the fruit grower must make every effort to make his product pleasing to the consumer and at the same time be able to furnish it to him at a reasonable price. The Michigan fruit grower, who has been very backward in attaining this attitude toward the consumer, must solve this phase of the problem or get out of the business, for other fruit growing sections will take away the trade. The present attitude is to catch the consumer, soak him and then look for someone else to soak; anything to get rid of the stuff will do. Our system of grading fruit is also at fault, for a No. 1 apple means nothing, as every fruit grower has his individual idea as to what a No. 1 apple is. We need either state laws or the co-operation of fruit growers in packing and selling fruit under established brands.

Co-operation Necessary.

Co-operation is also needed in the matter of marketing. At present the distribution of fruit is faulty because most of the fruit growers will ship their fruit to markets already glutted. Co-operative organizations can keep in better touch with the market than the individual grower and in that way place the fruit to better advantage. Co-operative selling is also of advantage in holding trade. Regardless of how good the individual grower's fruit is, he hasn't enough to hold the trade of any buyer while in co-operative selling bulk is sufficient to hold trade from year to year. Although co-operation is the solution of the marketing problem, there are many problems to solve in the running of co-operative associations. Many fail because they are not organized right and are co-operative in word only. There is serious trouble in the northwest, where co-operation is developed to a very high extent, which Mr. Bassett likens to a disease which he calls "co-operative spotitis," which would indicate that there is co-operation in spots. Very often there is co-operation within the society but not between societies. The buyer of fruit who goes from one association to another is responsible for this. He goes about spreading discord among societies so that they are competitors instead of co-operators for the common good, and in time the stronger societies will try to eliminate the weaker ones. To make the association itself a success it is necessary to have the members held by strong rules and have a manager who is absolute authority in the management of the affairs of the society. Mr. Bassett dwelt at some length upon the market news information which the Department of Markets is furnishing fruit shippers. A description of this practical and most valuable service has already been given in detail in our columns.

The Anti-trust Law and the Farmer.

In speaking of the Sherman anti-trust law Mr. Bassett said that it did not apply to the farmer and fruit grower, as congress realized that organizations of farmers were different from others because they were organizations of mutual help and economy, and therefore were not included within the scope of this law. In closing he said that individual efforts were useless because nothing has succeeded without co-operation.

Mr. Case, the next speaker, told his

secret of making an apple orchard bear every year, which was to thin thoroughly each year. For many years he tried to make his Baldwin orchard bear a crop annually instead of bi-annually, but he did not hit upon the solution of the problem until he had the apple itself analyzed. This analysis showed that the flesh of the apple was over 95 per cent water, but that the seed contained highly concentrated plant food. From this he came to the realization that if he could grow fewer but larger apples the drain on the trees during bearing years would not be so great. By the annual practice of thinning immediately after the June drop by eliminating all apples but one in a cluster, and then immediately going over the trees again and thinning the fruit to not less than four inches apart he has succeeded in getting his Baldwin trees to bear in the off season an average crop of two barrels per tree. One of the chief difficulties in successfully carrying on this work is to get the help to realize that a large amount of fruit must be taken off. One year all of his thinners went on strike because they did not want to pull so much fruit.

Fruit Growing in Other States.

Prof. H. J. Eustace gave a very interesting illustrated talk on "Horticulture in Other States." The slides were from the best collection of photographs which he picked up on his tour of examination of the principal fruit sections of the country. They were interesting and contained suggestions for improved orchard methods. A great many of them showing western methods of fruit culture.

At three o'clock the ladies in attendance left for the parlors of the Association of Commerce where they held an informal meeting, Mrs. J. P. Munson, of Grand Rapids, presiding.

The annual social event of the State Horticultural Society took place Wednesday evening, when the annual banquet was held in the spacious parlors of the new Fulton Street Methodist Church. After a most delightful meal furnished by the ladies of the church, the diners listened to wisdom and humor from the prominent horticulturists in attendance under the direction of the most able toast master, Hon. Chas. W. Garfield.

Orchard Heating for Michigan.

George Low, of Bangor, answered the question, "Is Orchard Heating a Success?" Mr. Low has probably had more experience with orchard heating than any other grower in Michigan, and he has been very successful in combating frost injury, especially in a 1600-tree Duchess orchard. He gave a detailed description of his large oil reservoir and had on hand sample heaters, frost indicators and other apparatus necessary to successfully carry on the work of fighting Jack Frost. His talk was very similar to his article in the Michigan Farmer, April 8 of this year.

Mr. C. F. Schneider, in charge of the weather bureau at Grand Rapids, told of the use of water as protection against frost. Bodies of water near orchards have beneficial influence because of the evaporation of moisture. Also, if the body of water is large it has a very beneficial tempering influence on the temperature. On this account Lake Michigan is a most valuable asset to the West Michigan fruit belt. It has also been found that orchards which were newly plowed at the time of frost danger escaped injury because of the moisture influence of the newly plowed ground. Spraying fruit plantations at the time when frost injury is likely, has also saved crops.

Mr. W. E. Koch, of Benton Harbor, suggested better business methods for fruit growers. His talk was full of interest because so many fruit growers

(Continued on page 628).

Some Protein Feeds

AT this season the careful feeder is in search of the best and cheapest concentrates wherewith to supplement his home-grown grains. He knows that an unbalanced ration is wasteful; that if the quantity of digestible protein is too small the animals produce less milk or beef. Furthermore, the other feed components, starch, carbohydrates, fat, etc., if in excess of the animal's capacity for assimilating them, are to some extent, passed out of the body, incompletely digested. Having tried a good many mill feeds in handling a herd of dairy cows, I am tempted to offer a few notes on the more common kinds, that, in my experience, seemed to possess the highest nutritive value.

The Value of Cottonseed Meal.

As a concentrate, rich in protein, cottonseed meal is unexcelled. Both as a milk and beef producer it deserves consideration. Analyses establish its high feeding value and clearly demonstrates that it holds the premier position for the largest amount of digestible protein to be had in any concentrate. For growing yearlings and other young stock it is unequalled, if fed moderately. It should not be fed to calves under six months old or be included in a ration for young pigs. A small quantity may be fed to ewes after parturition, with advantage.

This valuable concentrate is the by-product in the manufacture of cottonseed oil. The hull of the cottonseed is removed, the kernel cooked and subjected to pressure to remove the oil. The residue of cotton cakes are then pulverized, in which form they are placed on the market.

Cottonseed meal is frequently adulterated. If one is familiar with the genuine article, the difference can be easily detected. The pure meal is a light golden color, and should be free from black and brown specks. Hulls are generally used to adulterate the meal.

Another Good Concentrate.

Linseed meal gives good results when fed to all classes of animals. On account of its concentrated nature it, of course, must be fed in moderate quantities, and will be found valuable to correct the deficiency of protein in some of the home-grown food stuffs. Containing a high percentage of crude fat, it has a beneficial mechanical effect in rendering the passage of the other components of a ration through the alimentary canal less difficult.

This product is the residue left after extracting the oil from flaxseed with naphtha, benzine or a similar solvent of oil matter. In the extraction of linseed oil by the old process, the flaxseed was subject to pressure. The new process admits of more perfect removal of the oil from the seed; therefore, linseed meal obtained from the "new process" generally contains more protein and less fat than the "old process" meal.

Gluten feed and gluten meal are two important by-products from corn. Unfortunately these names are often confused. The terms are very much alike and yet there is quite a wide difference in the composition of the two products. Gluten meal is very much richer in protein and fat than gluten feed, whereas the latter is considerably higher in carbohydrates than the former.

A Good Corn By-product.

Gluten meal is the residue or part of the residue, from the manufacture of starch and, glucose. The process consists, essentially in the separation, first, of the germ and hull from the starch and gluten; and second, the final separation of gluten from the starch. The residue may then consist either of three products: a mixture of gluten, germ and hulls, a mixture of any two of these components, or any single component. In any case, the by-products are part of the original corn, but when prepared for market they dif-

fer from it, and from each other in the amount of nutrients and also in appearance. The entire residue is called gluten feed. It is a bright yellow color, more bulky than corn meal. The increased bulk is due to the presence of a larger proportion of bran in the gluten feed. Gluten by itself is distinguished by a high content of protein, and a deeper yellow color. This product is called gluten meal. Both the "feed" and the "meal" are exceedingly valuable feeds for dairy cows, when it is desired to increase the proportion of protein in the ration. The latter would, of course, be more effective but it is an exceptionally heavy meal, and a little more care would be necessary with its use.

Wheat bran is one of our best known by-products. It contains protein, fat, ash and soluble carbohydrates in such proportion as to make it an exceedingly valuable component of a dairy ration. Owing to its bulky nature it is a splendid material with which to mix the heavier feeds mentioned.

J. H. MCKENNEY.

DIFFICULT CHURNING.

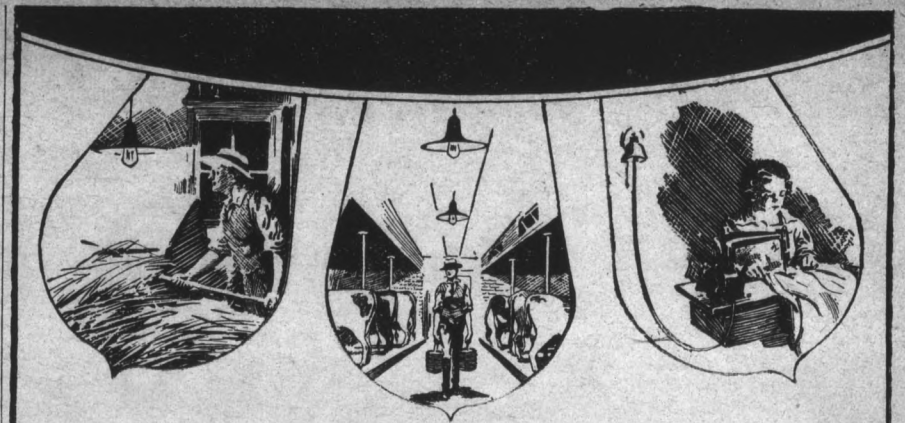
Failure to get butter "to come" by churning is not an uncommon experience during the winter season. The trouble most often occurs on those farms where only a few cows are milked. If the milk of one or two animals is responsible for the difficult churning, other milk when mixed with it will overcome the trouble. Usually when the trouble occurs it is due to one of two causes; an incorrect churning temperature, or because of the peculiar composition of some milk and cream.

During the cold months of the year cream should be churned at a higher temperature than during the summer months. For this reason a careful regulation of the temperature is necessary to give the proper ease in churning. If the temperature at which one churns is not high during the winter months, the cream must be churned a longer time to form butter. One may churn at so low a temperature that butter will not form with a reasonable amount of churning.

Sometimes when cold cream is agitated in the churn it will whip and expand until the churn is nearly full. In this condition butter will not form because the cream cannot be sufficiently agitated. When a low temperature of the cream is the cause of difficult churning the trouble may be easily corrected by raising the temperature. As the winter season approaches there is usually a larger number of stripper cows. When a cow becomes nearly dry the butter-fat globules in the milk become very small and collect with great difficulty on being agitated in the churn. During the winter the feed is such that the fat globules become very much harder and this likewise interferes with ease in churning. The cream also becomes more viscous as the animals advance in their lactation period and this again makes churning more difficult.

Whenever butter granules fail to appear in about 30 to 40 minutes' churning, the cream should be raised in temperature. It is well to raise the temperature only a few degrees at a time for if too warm the cream will give butter with a very soft salvy texture. If on raising the temperature a few degrees the butter refuses to gather, a further raise of temperature is necessary. Whenever a raise of temperature does not give satisfactory results, add cold, pure water until the cream is diluted down to about the thickness of milk, re-separate the mixture and discard the skim-milk. The cream should then churn easily but upon failure to produce butter the cream should again be diluted and re-separated.

Mo. Agr. College.



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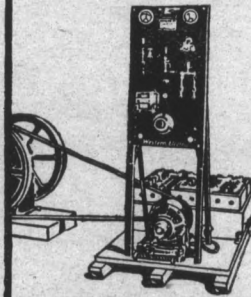
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Accessories to Foods

By FLOYD W. ROBISON

Table Sauces

AMONG the accessories to food products which are of very great importance are the spices, catsups, table sauces, pickles, etc., which are found in greater or less abundance on every table. By calling these accessories we do not mean to imply that they are devoid of food properties. In fact, practically all of the accessories which we have been discussing have some food value, but it is not because of their food value as foods, that is, their energy replacing value in the human body, that they are valued in the diet but because of their adjunct relationship to foods.

Let us take, for instance, tomato catsup and its various modifications. The basis of tomato catsup, chili sauce, etc., is tomatoes, of course, but one scarcely eats tomatoes or tomato catsup because of the food properties which that product contributes. For, laying aside the sugar which the product carries after manufacture, the amount of food nutrients which are contributed to the diet by the small amount of catsup consumed is almost negligible. Nevertheless, the tomato products are foods and are properly considered under that heading. Their value in the diet, like coffee, tea, cocoa or chocolate, beef tea, and vinegar, is out of all proportion to the value which they furnish as foods.

Table Sauces Have Been Much Adulterated.

Catsup and table sauces are of very variable composition and these products have probably in previous years been as much subjected to adulteration as any class of food products. It has taken quite a long time to secure a clean and proper manufacture of tomato products. This being one of the cheapest fruits, it is very extensively canned throughout the country and during the rush season of the year when they must be marketed within a comparatively short period of time, until recent years, close scrutiny of the canning operations has not been conducted. At the present time, however, the condition in this industry is very excellent and the type of tomato products which are on the market at the present time is certainly a credit to this industry.

The value of tomato products consists almost entirely in their peculiar condimental properties, and the distinctive flavor which they contribute. Tomato catsup has for its base tomato pulp, and under the rigid inspection methods which are maintained by the Department of Agriculture, one is certain of getting a pretty satisfactory product.

These Products Are Now Manufactured Under Careful Scrutiny.

The process of the manufacture of tomato catsup commercially is to remove the skins and seeds of the fruit and then to pulp the product through a pulp machine which renders it very fine. The pulp is then usually canned and stored until the time of the manufacture of the catsup. In the process of the manufacture of catsup, spices of various kinds are used, as well as sugar and vinegar, in addition to the tomatoes. This product then, tomato catsup, differs very materially in flavor from the original tomato. In fact, tomato catsup may be considered to be a distinctive product having very few of the characteristics in common with the basic material from which it is made. Some manufacturers still use preservatives in the preparation of tomato catsup but with the exception of one or two, most concerns have concluded that the public desires a product free from added chemical preservatives.

Some Spices Are Used for Furnishing Coloring Matter.

One of the points which have given

the manufacturers of catsup the greatest trouble has been the question of color. The color of the home-made catsup is very much darker than is the color of the tomatoes used. This modification of color is brought about through the influence of the cooking and the spices which are used. The manufacturers of the commercial product desire to keep the color as near that of fresh, ripe tomatoes as is possible. Consequently in the early days artificial color was used to bring this about. Most manufacturers at the present time do not use artificial coloring, one reason being that federal laws require that when color is used the fact of its employment shall be plainly stated upon the label, so the manufacturers use a label now which reads, "Contains no added artificial color." In spite of this many of the catsups on the market are very brilliant in color. We have understood this to be brought about in many cases by a careful selection of the type of spices used. Paprika contains a very great deal of coloring matter and is a mild pepper, so that large quantities of this product may be used without getting the product overspiced. In this way the bright color of the paprika imparts itself to the finished product and thus accomplishes in reality the effect of the addition of artificial coloring matter although it is maintained by the manufacturers that this paprika contributes real value and the fact that it contributes color is merely an incident to its employment in the product.

Table Sauces Are Largely Condimental in Character.

Canned tomatoes, tomato catsups, chili sauce, etc., are exceedingly valuable adjuncts to the diet and have the same excuse for their use that the other accessories which we have discussed likewise have. As an indication of the amount of material which may be construed as food material in these accessories, one of the United States Department of Agriculture bulletins gives the following fuel values of one pound of these different accessories:

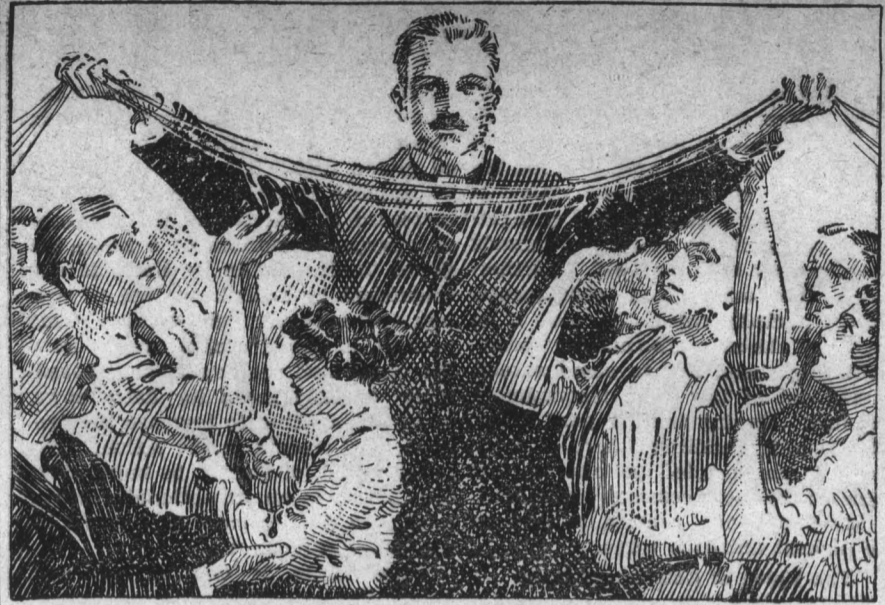
Tomato catsup	265
Horseradish	230
Green olives	1025
Ripe olives	975
Cucumber pickles	70
Mixed pickles	110
Spiced pickles	395

The most common pickles, namely cucumber pickles, contain, as prepared for food purposes, seven per cent of total solids. Of this seven per cent nearly three per cent is starches and sugars and about 0.5 per cent protein. In the preparation of mixed pickles, or gherkins, cauliflower, sometimes cabbage, onions, beans, etc., are very frequently used. These products are still quite frequently treated with preservatives, such as sodium benzoate and sometimes alum, in which cases the label must advise the consumer of the fact.

Preservatives, Even in Pickles, is Quite Inexcusable.

We think the use of preservatives or alum in pickles is a very undesirable practice, especially in view of the fact that very frequently in mixed pickles some one product in the bottle absorbs an undue quantity of the preservative so that while the label may state that the product contains only 0.1 per cent, it is possible for the onions, for instance, in the same package to contain practically three times the amount, due to the phenomenon of selective absorption, which condition we discovered a few years ago in making an investigation of preservatives in pickles. It is difficult to consider that such a product as horse-radish contributes any real food value to the diet. It is used in exceedingly small quantities and entirely regardless of any merit as

(Continued on page 619).



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SCIENTIFIC and
MECHANICAL

This Magazine Section forms a part of our paper every week. Every article is written especially for it, and does not appear elsewhere

A LETTER to Nephew Bill, who is going to spend Christmas with his uncle in the country:

Dear Bill:—Your aunt and I enjoyed your last letter very much, and we are getting primed for a good visit with you when the local sneezes into our bright little village on the night of the twenty-fourth. You ask what to bring all the folks, and wonder what will please them. Just pack a grip full of happy smiles and keep them jumping around the house on Christmas day and we won't worry about getting a new handkerchief, a pair of dainty socks or a superfluous shaving mug. You might bring along your check book though, Bill, we are going to run this Christmas like we did last year's.

Christmas Giving by Uncle Abe

By R. G. KIRBY

Just about one year ago your Aunt and I began talking Christmas plans. Cousin John was over, and his wife and two big boys who are working in Chicago now. They were on the farm then, and, by the way, they have had enough of paying bills in "Chi" and they are coming back to the farm the week before Christmas. Well! we began talking this "present business" and finally we doped up a little scheme which worked good enough to make it a habit. It seems year before last I gave Cousin John one necktie which

cost fifty cents. John presented me with one of these ornamental copies of a poem which I had read fifty years ago, and didn't like it then. I bought John's boys each a pair of nifty gloves. The boys didn't say anything, but I found later that they were too small and the boys had plenty of gloves anyway, and didn't think much of me as a glove buyer. They came from a mail order house where we ordered them two months before Christmas so there wasn't much show of the kids changing them. Anyway, they clubbed to-

gether and bought me a pair of Jim Morgan's special sale house slippers. Those slippers didn't fit and the bottom lining always slipped up in little balls and wrinkles and my old pair of house slippers were guaranteed ten years ago for five years, and I think they will wear fifteen years more.

Of course, we had a lot of fun for Christmas and enjoyed the junk, but we began to get so practical during Cousin John's visit that wife thought it was almost sacriligious. We calculated up costs of presents and we found that I had spent more than twenty dollars for stuff that wasn't needed, and I had received twenty dollars or more worth of junk not as practical as regular kindling wood. Most all the

WORLD EVENTS IN PICTURES



Lloyd-George Becomes Britain's New Prime Minister.



French Soldiers Ready for Winter Campaign on Western Front.



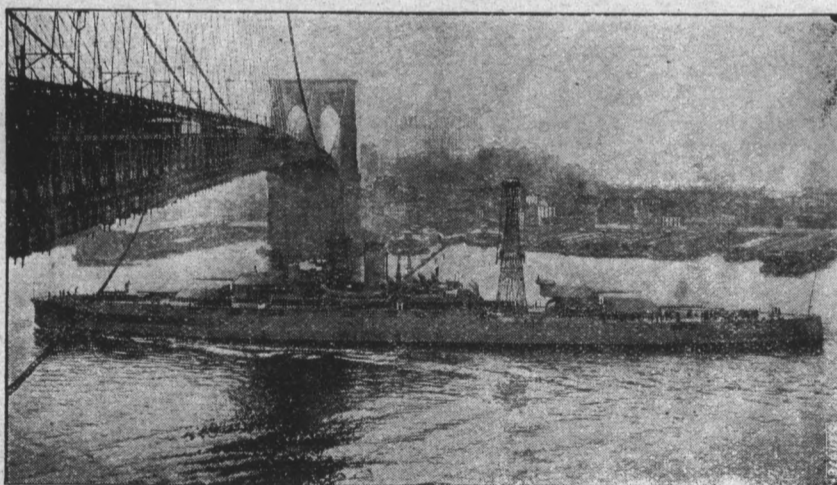
She Performs Duties as Town Crier in War Stricken District.



Dr. Henry Van Dyke, U. S. Ambassador to Holland, and Daughter.



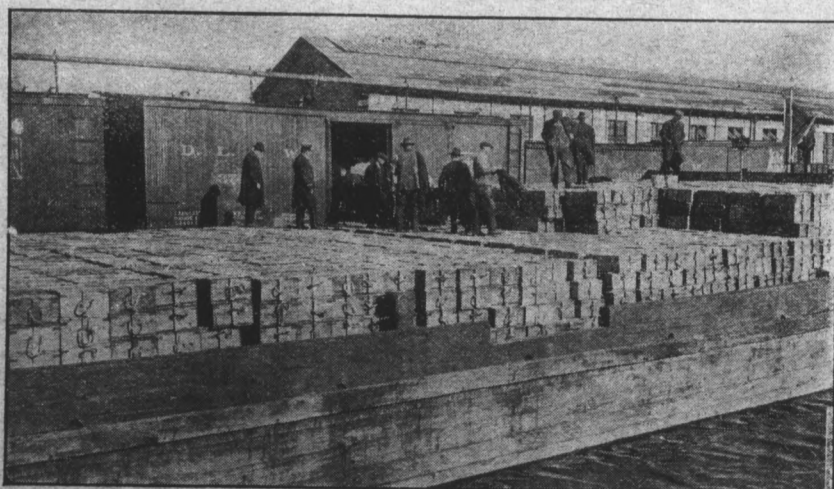
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folks at our Christmas spread reported the same experience. We talked it over in such a frank sort of manner that I was awful scared about our perpetual friendship, but things worked fine and we came out of the chat feeling so sensible that it made us proud of ourselves. It seems by actual figuring that real value is what counts. That being the case every giver in our crowd spent from ten to twenty-five dollars for Christmas presents and only received back an intrinsic value of about twenty per cent. Guess "intrinsic value" is what the preacher would call it; anyway, maybe I'm exaggerating when I say my mess of gifts was worth so much.

What do you think we did, Bill? Well, I gets out an old envelope which brought back a broiler check from Chicago, and writes on it: Abe, \$25. And then John he looks satisfied and he says, "John, \$25." And then both of the boys hawed around for a while thinking about the good old days when they were little, and finally they acted like real men. "We will give \$10.00 each," shouted George on my deaf side. Wife said she would give \$20, which would be \$5.00 less than I did, and she said that extra \$5.00 would be spent for real sensible Christmas fixings. That sounded like good judgment to all of us. I figured up the contributions on the smudgy envelope and it came to \$90, and we paid it all in right away and sent her off to the Belgian Relief Fund, and didn't regret it a bit.

Of course, you may say our own little Christmas party didn't spend that much among ourselves. That one crowd certainly did not, but all the junk we were accustomed to send out came that high, also cost a lot for stamps, and loaded down poor Frederick, our mail man, until he nearly killed a perfectly good ex-trotting horse hauling it to the village.

We decided to send postal cards to all our friends and wish them a Merry Christmas instead of burdening them with an obligation. It worked fine and I think it is the first Christmas that our family ever did any of the real good of the kind the Lord must like to see happen around these parts at least once each year. That's why I say to bring your check book and a smile, Billy, for we are going to duplicate the little custom which began last year.

After Cousin John and I and wife and the boys made arrangements for helping the Belgians, we began to think of our little home celebration. It was a dandy. I killed a turkey. Wife invaded the vegetable and fruit cellar and brought up everything from potatoes to peaches, which were raised on our own place. Wife's five dollar Christmas fund purchased nuts, chocolate bars, oyster stuffing for the turkey and one good cigar for John, who has the unfortunate smoking habit. That afternoon we helped wife wipe the dishes and then gathered around the fireplace and just talked. First, it was war news and we were feeling quite decent, since we had taken a financial interest in the only good thing about a war, which is the chance to help the under dog. Then we discussed politics and Panama Canal and ditch taxes and we had a heap of fun, and Christmas was a success, the biggest success of any Christmas that I remember since pulling a rocking horse out of the fireplace at age four years and five months.

We think you will like our style of Christmas, Bill, and this year we are going to have a little voting contest to see who gets the cash. It may be Belgium, Armenia, Poland, Servia, Big Brother fund, Tuberculosis Campaign or Red Cross, or maybe something else will turn up that's more worthy. You never can tell in this shifty old world just what's going to happen, but when there is a chance to keep Christmas with a clear conscience we are not going to desecrate the day by turning it into a collection time for ornamental junk that we don't need.

Honestly, Bill, it sometimes makes me sick how impractical folks do get in celebrating what they call the Christmas spirit. Two or three years ago, I think that was the date, they raised a fund in Sunday School to buy a big box of things for the Widow Johnson who lives down by the railroad with six kids, all under fifteen years old. They appointed a committee to act as purchasing agents and they went down and kept on purchasing until they had two fine turkeys, some canned pickles, a lot of mushy plums supposed to be fresh from California or some other place far enough away to make them expensive, a box of candy, a can of oysters and some other things which gave the little Johnsons one hurrah of a time, and also some stomach aches, and the whole thing was over in one day. Oh, I forgot to say that Mrs. Johnson needed some shoes worse than anything and the committee, after much wordy argument, decided which was the prettiest silk umbrella, and they sent it to her wrapped in tissue paper and tied with holly berry ribbon. It looked fine.

I heard about it and just pitied those poor Johnson kids, who received so much joy in one day that it made them sick thinking about it all the rest of the winter. Last year they raised another fund for the Johnsons, and wife was one of the purchasing committee. We talked over the little deal right here at home, and then wife talked some when there was a committee

meeting. Did those kids receive turkey, oysters, candy, etc., without any substantial stuff? They did not. Did Widow Johnson get a silk umbrella? She did not. The order went up on Christmas morning and it didn't cost any more than the year before, but it took Lem Watkins' sleigh-riding wagon to haul in the stuff. There were twenty-four cans of baked beans, four bushels of potatoes, two bushels of Spy apples, two wool blankets, a pail of lard, etc., and I dropped in four dozen fresh eggs in cardboard boxes. We just allowed enough candy to make the kids know it was Christmas, and the result was they had wholesome lunches down there at Johnson's for more than one day.

This is a funny world, Billy, and we seem to forget a lot of practical things which might give more pleasure than all the frills attached to some of our celebrations, like Christmas for instance. Possibly even a war has its use. It makes a lot of us think, and thinking pays. It is only a little while to Christmas and maybe you won't like our new scheme for distributing Christmas spirit. Let me know what you think about it, it won't be necessary to write, just appear on Christmas Eve with the check book and the grip of smiles—not another package in sight and I will know that you are with us heart and soul for a good time and a sensible Christmas.

As ever,
UNCLE ABE.

Lima Bean Industry of the West

By DOROTHA McBRIDE

THE first Lima beans grown in Southern California were planted in the Carpenteria Valley. The experiment proved to be a great success. From Carpenteria it spread to other sections until now Lima beans are the source of income to hundreds of ranchers in that state.

One reason why this industry is so profitable in Southern California is the



Single Lima Bean Bush Loaded with Pods.

climatic conditions and soil seem especially adapted to it. Very little, if any rain falls between seed time and harvest so no poles are necessary. The surface ground becomes dry before the vines spread over it. The roots, however, are deep in rich damp soil, which with the moisture-laden breezes from the Pacific keeps the vines green and growing until the crop is matured.

The beans are best planted in early May after the soil is free from the surplus moisture of the heavy winter rains, if the ground is too damp at the time of planting the seeds rot. To encourage deep rooting of plants and preserve all the moisture the land should be plowed eight inches deep in the early spring. Early plowing allows the land to settle which is better for the seed germination. An ideal seed bed should be firm but not compact with a dust mulch two or three inches deep to hold the moisture.

From 40 to 60 pounds of seed are used to the acre, depending on variety of seed and soil conditions. Regular bean planters are on the market but a grain drill with a specially made plate is quite satisfactory.

During the growing season the ground is given several shallow cultivations until the vines cover the

ground. One or two irrigations are also given during this period unless there has been abundant winter rains and the ground has held the moisture remarkably well. Very promising looking vines sometimes do not mature the beans well because they have been irrigated too much and cultivated too little.

The pods begin to turn yellow and ripen from about August 25 to September 25. The vines are then cut just beneath the ground and thrown into small piles for curing. In harvesting five to six acres is considered a day's work, while in piling a man will only accomplish from three to four acres.

After the beans are cured the threshing is begun. This is done by a large threshing outfit and usually 1000 to 2500 sacks are threshed in a single day. The usual charge is from 20 to 35 cents per sack for this work. After the threshing is done it is interesting to watch the women and children at work gleaning. This method is too slow for commercial purposes but is economical for domestic uses.

The yield of Lima beans ranges from 800 to 2000 pounds per acre, the aver-



Pitching the Podded Vines into the Chute of the Cannery.

age being about 1120 pounds. The farmers' selling price ranges from four to six cents per pound and the average cost of production \$20 per acre so that the net returns are from \$50 to \$60. California bean land is valued at \$250 to \$500 per acre.

When Lima beans are to be canned the young plants are cut while the bean is still small, and taken to the cannery where they are loaded into chutes, the beans are taken out by a mechanical process and the plants and

Pods are loaded into wagons to be used as feed or fertilizer.

There are 25 varieties of Lima beans grown in Santa Barbara county. Perhaps the most popular varieties are the Carpenteria Pole Lima, Burpees' Improved Bush Lima and the Fordhook Bush Lima.

Michigan white beans are selling at present for more than California Limas, but in this coming season the Limas will probably catch up and maybe surpass ours on account of the early rains which in many of the coast counties utterly ruined the crop.

ANGEL MESSENGERS.

BY L. MYRTLE SOURS.

Under a starry midnight sky
The sheep lay soft and white,
When the gates of Heaven were opened wide
And flooded them all with light;
And down from the golden gates there came,
From the choir of Heaven above,
A band of angels, all in white,
With a message of peace and love.

The shepherds were busy watching
their sheep
And heard not the soft whirr of wings;
They knew not that Heaven had opened
her gates
Where her angel choir sings,
Till an angel came suddenly down
where they lay
With glory that flooded the night,
And startled the shepherds, who trembled
with fear,
In the midst of the beautiful light.

"Fear not," said the angel, "glad tidings
I bring,
A message of wonderful joy;
For down in a manger in Bethlehem's
stall
Is resting a beautiful boy—
God's Son, and your Savior, the Christ,
promised long—
You'll find Him there swaddled in
bands,
But peace and goodwill and forgiveness
He brings
To the people who dwell in all
lands."

Then, quick! through the glory, that
flutter of wings!
A vision of angels all fair—
And, "Glory to God in the highest!"
rang out.
In the midst of the still midnight air,
"Peace on earth," rang the song, "and
good-will unto men,"
With praise to the Father above;
And through the deep stillness that fol-
lowed the song
Still echoed the message of love.

And down through the ages, with com-
fort and cheer,
Still echoes on each Christmas morn,
The beautiful song that the angels
sang
When Jesus, the Savior, was born.
And still, o'er the shepherds and flocks
of white sheep,
A glory and beauty are thrown,
For to them, in the stillness of that
happy night,
First, the coming of Christ was made
known.

SANTA'S GIFTS.

BY LALIA MITCHELL.

Santa Claus brought me a drum and
sled;
A trumpet to blow and a top painted
red;
A big box of candy, a knife and a gun,
A box of toy soldiers, and all these
are fun;
But finest of all Santa brought me a
pair
Of gloves of the kind Father likes best
to wear.

Santa Clause brought me a plate and
a cup,
A doll that says Mamma and even
stands up,
A book and a pencil, a Christmas card
bright,
A set of play dishes all shiny and
white;
But best of them all, Santa brought
me, he did,
Some gloves just like Mamma's and
really true kid.

Santa Clause brought us a whole lot
of toys.
The very kind dearest to wee girls and
boys,
And we were excited, as children
should be
As we opened each package that came
from the tree.
But dearest of all Santa's gifts that we
knew,
Were the kind he brought Daddy, and
Mother Dear, too.

"Mister 44" By E. J. RATH

"Something told me I was makin' the right move," she thought, her lips framing the words. "You can bank on a forty-four."

Stoddard was reading accurately what was in her mind, and it was this that halted his speech. He had no heart for telling her the truth; he could not bring himself to the point of slaying her simple and wholesome faith. What could he do?

Sadie's mind was running, still running placidly in the same channel of contentment, strong in the assurance that she was truly born for this new life.

"I can do 'most any kind of work after a little practice, I guess," she said. "I've got the strength, you see. There's a whole lot of the girls back down in Buffalo who couldn't stand it. The main thing is to find out what you can stand, I suppose, and then go to it."

"That's good philosophy," he commented. "Is it? I don't know much about philosophy, but that's the way it always seemed to me. And when you don't fit in, why, the best game is to back out quick. Speakin' of it, I never saw a woman back out so quick as I did today. I've been puzzling over it ever since. I didn't know she had sense enough."

Stoddard waited for her to go on.

"I met her comin' up on the train," explained Sadie. "She was alone and I was alone, and we got to talkin'. She was different from me; she was an educated lady. She was goin' to Deepwater, too—up to the other station. Her brother and husband are campin' there, she told me. And all the while she was talkin' about goin' to live in that camp I kept wonderin' how she was goin' to stand it."

"She was a slight little thing and seemed kinda timid about it. Said she hadn't ever been up here before, but her husband told her it would do her a lot of good. Of course, I hadn't been up here either, but I left like a regular old-timer alongside of her. She said if she didn't like it she wouldn't stay here long—and she didn't!"

Sadie stopped to laugh. "Go on!" commanded Stoddard in a queer voice.

"Well, I got off here, of course," she continued, still chuckling, "and we said good-by, and she went on up to the regular station. After I'd been here a little while I heard another train comin'. Pretty soon it went by, goin' in the other direction. And what do you guess?"

"I'm not guessing. Go on," he said grimly.

"Well, Mr. Stoddard, there was that lady sittin' on the platform of one of the cars. She was sittin' there like she was dreamin'. She was holdin' on to her grip with one arm and she was starin' at a piece of paper in her hand."

"I was so surprised I just let a yell out. She looked up at me, all startled like, and opened her mouth. I don't know whether she said anything; I couldn't hear. It was all in a second, anyhow. Then she was gone."

Sadie paused and shook her head slowly.

"It certainly beat me," she added. "I oughtn't to laugh, maybe, but I can't help it. That was the quickest mind-changin' act I ever knew."

"But I guess she had the right dope after all. She wasn't cut out for this place and must've found it out in a hurry. Don't you guess that was it?"

Stoddard swallowed a few times and bit viciously on the stem of his pipe.

"It's evident she made a change in her plans," he said shortly. "Sometimes they do."

"And I never thought she had that much sense, either," commented Sadie.

"It's all right to change your mind if you have to; but hers wasn't ever made up. I'd feel awful foolish if anything like that ever happened to me."

Stoddard merely nodded. He knew that such a thing would never happen to Sadie. He doubted if it would even have been attempted had the real No. 18 alighted from the train at Deepwater Station. The woman on the south-bound was easy to handle; she was little and pathetically bewildered. But this one!

"What do you work at, Mr. Stoddard?" asked Sadie suddenly.

"I'm an engineer."

"You don't look it," she said in a surprised tone. "Locomotive or stationary?"

"Neither," he answered, with a faint smile. "A civil engineer."

"Meanin'—"

"Building bridges, laying railroads, and that sort of work."

"Oh, I see," said Sadie slowly. "That's different. That's an outdoors job."

"Yes, mostly."

"I couldn't figure you runnin' an' engine, somehow. You go wherever they happen to be buildin' a railroad?"

"That's about it."

"You mean anywhere? All over." asked Sadie, her eyes widening.

"Anywhere the job may be?"

"In foreign countries?" she persisted, her voice incredulous.

"Sometimes."

A long sigh escaped from Sadie's dips.

"Gee, but that must be elegant," she whispered in a tone of awe—"just to go everywhere—outdoors!"

"You're rather strong for outdoors," he said, watching the play of her vivid imagination on her face. "How did you come to get the idea?"

"I don't know," said Sadie, shaking her head. "It sort of grew in me. Of course, I was farm-raised; but that didn't count—not like this."

Her arm swept in a broad gesture toward the woods across the track, beyond which the white water of Spruce River was voicing its eternal song.

I just knew I'd have to get outdoors some time. I guess I can't explain it. I can't get at the words, somehow. But I felt it. And when you feel things you know 'em better than any other way. I do, anyhow."

Sadie paused and gravely inspected the man who stood in front of her.

"I don't have to explain it to you," she added in a contented voice. "You understand it even better'n I do. You feel it, too. I could tell when you wrote, and it wasn't so much what you said, neither. It was just there, in the letter, and it didn't need no words."

Stoddard looked at her with a sense of many confusing impressions. In some things she seemed but a child; yet when he tried to study the child he found in its place a woman. More bewildering still—a woman of a kind utterly new—at least to him.

Her speech irritated him; Kitty and Estelle did not talk like this. Yet he found himself listening with a curious eagerness, for through all the unfamiliar mixture of slang and stumbling etymology ran a note that was strong and deep and true. The thought was there, even if the words served it poorly.

Always, to Stoddard, speech of this kind had spelled ignorance. Was this woman ignorant? Strangely, he found himself drifting to the conclusion that she was very wise.

Was she simple? He had a persistent notion that there were some very strange complexities in her nature.

Was she shallow? He answered that readily—no. Already he had glimpsed depths that astonished him.

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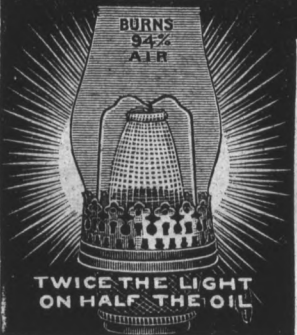
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said that: "But I ain't anxious to get my new suit all tore, either, and I guess I did that time. It's these stingy skirts we're all wearin' now," she added, naively speaking for her sex. "Some fashions are awful trying."

"Some of the women who come up here don't bother with skirts at all," he informed her.

"You mean they just wear—pants?"

"That's it; pants."

He could hear her chuckling behind him.

"What do they look like?" she asked.

"They look all right. It's sensible."

"They don't wear 'em around the hotel, do they?"

"No; they put skirts on there. I mean out in camp."

"Oh! Well, maybe it's all right. But I can't help laughin'. I'm thinkin' how some that I know 'd look. No. 12, for instance. Why, she wouldn't be nothin' but a little boy! Pants, eh! I'll bet they look funny!"

An instant later:

"What do you know about that? There I go again! Something tore, too. Well, I'm no suffragette, but I wished I had a pair right now!"

When Stoddard dropped the canoe into the water at the other end of the portage he pointed across the broad sweep of the South Arm to a group of faintly twinkling lights.

"There's the hotel," he said.

"How far?"

"It's close to three miles. It's on an island."

Sadie began an examination of her skirt that confirmed her worst suspicions.

"It's got two slits instead of one, now," she announced. "That ought to make it twice as swell, hadn't it. It's easier to walk in, anyhow. Here's the grip. Do I sit in the same place?"

The hotel lay diagonally across this arm of Deepwater, and as Stoddard laid the course for it he cast anxious glances skyward and behind. The prospect did not please him. The South Arm is wide and open near the upper end, its surface unbroken with islands for several miles. That on which the hotel stands is the first of an irregular chain that stretches off southward. Winds sweep unchecked, and no obstacle offers itself to the rush of the seas they carry before them.

A few drops of rain fell. Stoddard bent to his paddle, throwing into each thrust all the energy of his sinewy back and shoulders.

"Better put on that ulster," he advised. "It's going to rain some." Sadie drew the garment about her shoulders.

A few minutes later he felt a quick puff of warm wind on his cheek; then the air was still again; then another puff. The rain was becoming steady; it fell in heavier volume. The wind was not far off now.

"We're going to get wet. Can you stand that?" he called.

"Nothin' on me 'll run," she answered cheerfully.

Now came a sharp blast of wind that did not entirely die away, but played fitfully on the surface of the water, uncertain as to direction and even hesitant as to pace. First it dashed the rain into the back of his neck; then, with a bewildering shift, sent it beating into his eyes. Stoddard bent his head and laid himself to his work.

Glancing up at brief intervals, he could still see the lights of the hotel, but they were becoming dimmer each time. The rain had overtaken the canoe from the rear; he knew that when it had advanced a little farther beyond them it would blot out completely the beacon that was guiding him.

The wind was picking up rapidly and steadying itself. In a few minutes there would be a sea. Stoddard gritted his teeth. He knew he should not have taken the chance. Alone, the risk would not have given him concern. He had taken a light canoe through more than this stretch of storm-lashed water and been none the worse for it.

(Continued next week).

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Woman and Her Needs

At Home and Elsewhere



Domestic Science In Rural Schools—II.

WHILE much of the work being done in rural schools in connection with domestic science consists simply of serving something hot for the noon lunch, other plans are being tried in a few counties. In Charlevoix county, where Miss May L. Stewart is county commissioner, a home work system is being tried out. This simply means that the children are being given credit at school for work done at home, with the idea of impressing upon both pupil and parent the fact that work being done in the school is practical and has a direct bearing on what must be done after school is over.

At the beginning of the school year Miss White mailed each of her teachers a letter explaining the system, with blanks for reports to her, and a letter and report blanks to be sent to the parents. Each child is given a report card to take home and is told that he will have credit in school for the work done at home. In some schools a record is kept on the black board of the reports as they come in, thus encouraging the children to do their best. The work was planned to bring farm, home and school into closer relation, as Miss White feels that only as the school can co-operate with the home is it a success.

The report cards are ruled with spaces for each week's total of credits and the total credits for the entire month. The following is a list of the things the child can do, with the number of credits allowed for each task:

Washing and wiping dishes, one credit; running washing machine one hour, two credits; taking care of baby one hour, two credits; putting up own dinner, one credit; mending one pair of socks, one credit; mending clothes one-half hour, one credit; polishing own shoes, one credit; sleeping with open window, one credit; errands, one long, two or three short, one credit; sweeping paths in snow, one credit; bringing in four pails of water, one credit; depositing \$1.00 in bank, two credits; making entire batch of bread, five credits; cleaning two lamps, one credit; making two beds, one credit; getting entire meal, three credits, churning, two credits; sweeping two floors, one credit; ironing one hour, two credits; setting table, one credit; dusting house, one credit; currying horse, two credits; feeding five pigs, one credit; milking one cow, one credit; mending a chair, one credit; feeding two horses, one credit; cleaning barn, one credit; gathering eggs, one credit; bringing in wood, one credit; feeding three cows, one credit; field work per hour, two credits; building fire, one credit; separating milk, one credit; making cake, two credits; work not listed above, per hour, two credits.

As a further incentive to work, a "Home Work Honor Certificate," signed by the commissioner, is given each pupil earning 125 credits. When pupils under the fifth grade earn four of these certificates they are given a large diploma, while those in the fifth and over must earn eight certificates before they can receive a diploma.

"Perhaps I would be rather radical in my views about the plan, since I am an ardent believer in work as a panacea for all the ills that flesh is heir to," said Miss White in discussing the sys-

tem. "And since I am daily boosting the plan, of course I have nothing but good words for it.

"Parents and pupils have responded splendidly. In one case a teacher thought it was too much work to introduce the system, and couldn't escape the requests of parents who wanted to give it a trial, so began it last week. It is a little too autocratic perhaps in one or two of its provisions, but will probably be revised next year. The two per cent of our population who object to being required to do anything, have balked a little, but the thinking parents overlook or have overlooked the fact that they are required. It has changed the tone of some of the schools, but there are so many possible sharps and flats that possibly we have not the same tone in mind. I am looking for deeper and more lasting results than could be estimated in the short period during which we have been working under this system. The regulation of the system takes considerable thought and leadership.

"A state committee is at present investigating this work as it has seemed workable in high schools in the southern part of the state and elsewhere. We are to have the report at our next commissioners' meeting, which will be some time this winter."

Hot noon lunches and sewing clubs are the mediums through which Traverse county teachers instill a knowledge of housewifely arts into the heads of their pupils. Hot lunches were served by Miss Norma Turnbull in the Bates school, and by Miss Ethel Brosch in the McKinley school. Miss Lillian Moblo, Miss Frances Williams and Miss Anna Sill organized sewing clubs in their schools. Miss Moblo's pupils exhibited garments they had made, at the county fair both this year and last. Commissioner Lee Hornby reports that all these teachers are teaching in one-room schools.

DEBORAH.

FOR NEXT CHRISTMAS.

BY HILDA RICHMOND.

Last year I began buying Christmas presents as soon as the January sales succeeded the Christmas sales and some of my friends laughed at me. The idea of getting ready, or even beginning to get ready, at that early date, was very funny to them and many were the jokes they made about my thrift. But when the end of the year rolled round and the presents emerged costing about one-half what they would before the holiday in December, then it was my turn to joke about the "put-it-off" tribe. So each year, after Christmas, I shall invest in some presents and during the few spare moments I have all the year round I shall work on them.

For example, a beautiful pair of towels with simple hemstitching, cost about two-thirds what they sell for now, and some pretty bath towels were less than half price. The bath towels have the simple crocheted edge so common now. A soiled piece of art linen made a number of cushion covers after the best parts were cut into dresser scarfs. The scarfs were edged with a small embroidery design and were soon finished. The beauty of the material came out in the wash tub, and then they were laid away. One such

scarf cost 30 cents, but a similar one was shown in the store for a dollar and a half. Apron material cost less than one-half because it was soiled, and odds and ends of trimmings were on the remnant counter at a fraction of their cost when clean. A remnant of silk at 25 cents made two dolls' dresses and there was enough left for a little bag. A child likes a silk dress for a doll better than anything else in the world. And, by-the-way, dolls sell very reasonably after Christmas. If the bodies are soiled from handling, a little glove cleaner will make them nearly as nice as new.

I have a large box into which I throw the odds and ends I buy, but I never get anything unless I know of a definite use to be made of it. It is hard to keep to this stern resolve, but it pays. Just because a thing looks cheap is no reason why I buy it. It must prove to me that I can use it for something both useful and pretty before I invest. I have seen too many women buy useless things and frittering away money, thinking that perhaps the thing will come handy sometime. I can not afford to buy under such vague conditions.

"But as sure as I begin early some occasion comes along and I draw on my Christmas box for a gift," I hear some woman saying. Yes, that is true, but there is another side to the question. Last summer I was able to draw on my box for a gift that would have cost me three dollars in the store but out of the box it cost 78 cents. There was no time to make anything then, so it was either open the box or go to the store. You may be sure I did not go to the store when an article that could be replaced could be furnished at that cost.

So I am getting ready "For next Christmas" the whole year through. If my purse were overflowing with money I should like very much to go shopping recklessly without looking for bargains, but after all, there is a joy in contriving and planning and making much out of little that I fancy rich women never experience. At least, it is well to believe that, for it helps mightily in the little economies of everyday life and makes giving all the sweeter and more blessed at Christmas time.

THAT SUNDAY DINNER.

BY GRACIA SHULL.

Isn't it a problem? In so many, many farm homes the Sabbath day is the only day in the week when all of the family can partake of the noonday meal together, consequently this meal in most country homes assumes the character of a banquet and this banquet must be planned, prepared and served by a committee of one—mother. Sunday means anything but a day of rest to her. Of course, she enjoys having her boys and girls home for that one day, and it is lovely for the boys and girls who teach, or clerk or attend school away from home, to have a nice country home to spend the Sabbath in, but how about mother? Shouldn't she be considered and the day's labor made lighter for her?

We think that we have solved the Sunday dinner problem in one home at least, also the Sunday supper, and mother has plenty of time to attend morning and evening services at the little white church just around the

bend in the road. And she has the afternoon to spend as she pleases—read, write letters and visit with her family.

This is how we manage: In the first place, there is an oil stove, a fireless cooker, an inexpensive chafing-dish and a casserole. These help to lighten labor wonderfully. Vegetables and meats are prepared on Saturday and early Sunday morning they are brought to the boiling point, then popped into the fireless cooker. Peas, string beans and lima beans may be kept fresh overnight in the ice chest or in a cool cellar. These are delicious cooked in casserole or in paper bags. Cooking in the latter eliminates one utensil that would otherwise have to be washed. A nice custard, frozen pudding, fresh stewed or preserved berries or fruit served with whipped cream, will make a delicious and satisfying dessert.

Chicken, lamb, veal or plump pigeons may be cooked in casserole and popped into the oven of the oil stove to re-heat just before dinner is to be served. Gravy may be made at the last moment, a salad may be prepared quickly from home-canned string, lima or kidney beans or canned peas.

Have a half-dozen hard-boiled eggs in the ice chest ready to peel and make a quantity of mayonnaise on Saturday or through the week, as it will keep indefinitely. A head of crisp lettuce, shredded, two tart apples, chopped, one bunch of crisp celery cut in small pieces, and one cup of nut meats, any kind, tossed together with a fork then moistened with mayonnaise, and a quarter of a cup of thick cream, will make a dainty salad that is easily and quickly prepared. We aim to "cut out" the heavy pastries and the tiresome standing over a hot stove, and have succeeded fairly well in doing so. The dinner table is set and covered with a cheesecloth cover Saturday night, and breakfast Sunday morning is served at a certain hour on the kitchen table. We use paper lunch cloth and napkins on our Sunday dinner table and cups for cold drinks are also of paper. This is a help to mother on wash day. Sunday night supper is served on paper plates, cafeteria style, and is just a satisfying luncheon that is mostly prepared on Saturday morning. The chafing-dish is used instead of the stove in preparing the supper and we all enjoy making our favorite creamy dishes, or a pot of hot tea or cocoa, panned oysters, etc., over this dainty little alcohol stove. Even father takes a hand sometimes and scrambles eggs or makes an oyster stew in the chafing dish.

We all enjoy these Sunday dinners and suppers and would not think of going back to the old way. Mother seems so much more cheerful now when the Sabbath day rolls round, it rests and cheers her wonderfully. I happen to know just how much she appreciates the rest and change for—I am mother!

FUN AND FROLIC.

BY MAE Y. MAHAFFY.

A group of women who are greatly interested in nature study and who devote their regular meetings to serious work along this line is accustomed to setting apart one evening in the winter to the entertainment of their husbands by a special program. Upon this occasion fun and frolic reign, and the more ridiculous and side-splitting the numbers on the program appear, the bet-

ter pleased are the members composing the committee on arrangements. With a few changes some of their "stunts" might easily be utilized for other social affairs, since none of them require any great amount of practice or difficult make-up.

One number which drew forth rounds of applause at their recent gathering, which always begins with an exceedingly satisfying picnic supper, known on the program as the "overchewer," was a performance by the Nature Sympathy Orchestra. The ten ladies composing this orchestra were garbed in white coats and caps, borrowed from obliging merchants and dentists. Some wore medals, and the conductress was quite elaborately bedecked with these companions of directors. She also wore white gloves and a red sash over her shoulder. "El Capitan" was the first number, the victrola serving as accompanist. Among the instruments used were glass goblets with nutpicks; serving bells and forks; two tin lids to clash together; a washboard of the small variety, rubbed with a piece of sandpaper fastened to a small block for convenience in handling; nutmeg graters; a tin tray with a drumstick in the shape of a dish mop, etc. Until one has experimented with such paraphernalia they can have no idea of the effects which can be secured with a little attention to time and volume. As an encore a parody on a popular song, the words suited to the occasion, was given.

Another taking number was by six ladies. The victrola played the "March of the Toys" from "Babes in Toyland," while the ladies marched in backwards, having false faces over the backs of their heads, sun-bonnets on hind-side-before, and large all-over aprons on backwards. A little march, with bows to the audience and to partners, backwards, of course, though apparently forward, was suddenly brought to a halt by someone noticing the music, when all stopped to listen. At one of the particular noisy parts of the music all became frightened and ran off hurriedly. For the encore the masks were quickly changed to the real faces, bonnets put on right, and the little skit, "Bear and Mountain," was sung by one of the group, the others joining on the reply to her query.

HOUSEHOLD HINTS.

Household Editor:—I. L. L. wished to know what made her pumpkin and custard pies raise in the center. It is due to air under the crust. Grease the tin and lay crust on and begin at one side and smooth to outer edge, leaving no air bubbles in, then take a toothpick and pierce crust in bottom and sides. The holes won't be large enough to let liquid through. If you take your hands to press the crust off instead of a knife, it helps also. Will someone please tell me what makes my baking powder biscuits bitter? I have tried with less baking powder but they seem to have a bitter taste. They are nice and light always. Mrs. F. L. C.

Household Editor:—I would like to answer I. L. L.'s inquiry regarding pies. The bottom crust puffs up because it is too hot on the start, on the oven bottom. Just place an asbestos mat under the pie, and I think you will have no further trouble. Can anyone tell me how to remove the "shine" from a serge school-dress? Have tried soapbark and sponging with coffee. I would like to know why my cakes are not "feathery," as the recipe assures me they will be. I try to follow the recipe exactly, and while they are not at all heavy, they are a little too solid. If I use less flour, they fall. My recipe is one scant cup of sugar, one egg, (beaten), one cup sweet cream, salt, vanilla, one and two-thirds cups of flour, one and two-thirds teaspoons of baking powder. (I use a cream of tartar powder). I make this for a two-layer cake. I have tried beating it for some time, baked it slow, moderate, and hot,

but all to no avail. I have tried other recipes, using butter instead of cream, and whether I make it into a loaf cake, or a layer-cake, I cannot get that feathery consistency that I wish. Can you help me? I wish to thank you for the many helpful ideas I get from the Household Department.—M. W. H.

ACCESSORIES TO FOODS.

(Continued from page 612).

a food which it may have, although, of course, we must concede that what little material there is in horse-radish does enter in some way into the bodily mechanism. The particular reason for the employment of horse-radish is the peculiar, pungent, aromatic oil which is so biting and which is so highly prized as a condiment. It is usually prepared by grating the root through a nutmeg grater and mixing the finely comminuted product with vinegar which in turn acts somewhat as a preservative. The employment of grated turnip as an adulterant of horse-radish, it is said, has been extensively practiced some years ago, but in spite of this quite regular claim, we do not know that any manufacturer has been prosecuted for this particular infringement of the law.

Besides catsups and their allied, condimental materials, we have a great variety of mixtures or preparations which are used exclusively for the purpose of their condimental action in connection with meat. Among these we must mention Worcestershire sauce, tobasco sauce, and the great variety of relishes, southern dishes, etc., of like nature which may be said to be used almost exclusively for their condimental features and whether they contribute any food value whatsoever in so far as the general purpose of the product is concerned, is entirely immaterial. They are important accessories to the diet and as such have an entirely legitimate excuse for their employment.

MICHIGAN FARMER PATTERNS.

Our latest Fashion Book, containing illustrations of over 1,000 designs of ladies', misses' and children's garments in current fashions, also newest embroidery designs, and articles which give valuable hints to the home dress-maker, will be sent to any address upon receipt of ten cents. All patterns are ten cents each.



No. 8133—Boys' Russian Suit. Cut in sizes 2, 4 and 6 years. This suit is decidedly a boy's style, has a smart closing outline, fitted with a pocket and has straight trousers.
 No. 8131—Ladies' Skirt. Cut in sizes 24 to 30 inches waist measure. This skirt is cut in four gores and has the front and back gores gathered to yokes.
 No. 8134—Ladies' Dress. Cut in sizes 36, 38 and 40 inches bust measure. The dress closes at the back, the front is in panel effect and the dress has side peplums.

\$200. in Cash Prizes

A first prize of \$100 will be awarded for the best letter giving reasons for using Royal Baking Powder.

Ten prizes of \$10 each for the next ten best letters.

A cook book containing several hundred practical recipes will be mailed free to each contestant.

Conditions

1—Letters must not contain more than 200 words and must be received before Feb. 1, 1917.

2—Contestants must be users of Royal Baking Powder at the time or before sending the letter.

3—Each letter must state name of paper in which this advertisement is seen.

Address all letters to:

ROYAL BAKING POWDER CO.
135 William Street, New York City

Genuine comfort if you ask for and get—

Mayer's
Martha
Washington
Comfort Shoes

Beware of Imitations— name and trade-mark stamped on the sole.

F. Mayer
Boot & Shoe
Company
Milwaukee,
Wis.



37
DIFFERENT
STYLES

Buy Your COFFEE WHOLESALE IN 5-LB LOTS Get the BEST and SAVE 10 cts per pound. WE PAY POST, EXPRESS or FREIGHT IF YOU LOVE GOOD COFFEE SEND FOR PRICE LIST JEVINE COFFEE CO. (Est. 1881) Coffee Specialists Dept. 7, 2855-57 W. Madison St., CHICAGO.



Style and Comfort:

We make ladies' furs, coats, caps, vests, gents' robes, coats, gloves, mittens, vest, caps. We do taxidermist work. Send in your furs and have them custom tanned and made to order at factory prices. We do our own Custom Tanning, Dressing and Making up in our own plant by skilled workmen. Send for our circular on Custom Tanning, Dressing and Manufacturing. W. W. WEAVER, READING, MICHIGAN

Our winter production of

FRESH FROZEN FISH

will start as soon as cold weather sets in. Your name and address on a postal will bring our price-list.

WISCONSIN FISHING CO.

Dept. Y. Green Bay, Wis.

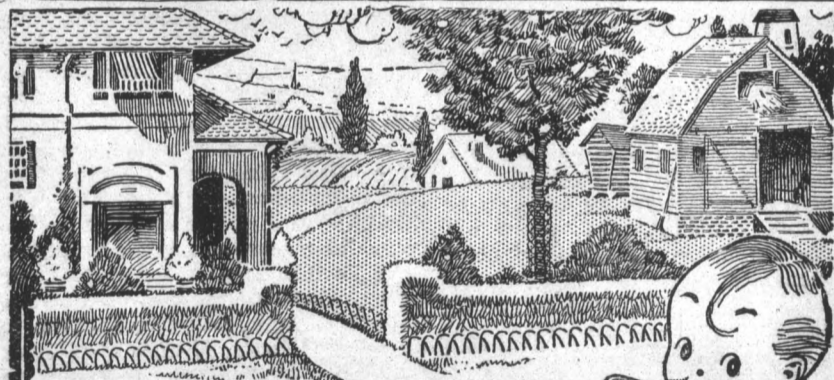
Strawberry Plants

Of all kinds. Fine stock of the wonderful EVER-Bearing Plants, at RIGHT PRICES. Raspberries, Blackberries, Gooseberries, Grapes, Currants, etc., everything for farm and Garden. Catalog Free. Six Everbearing Strawberry Plants free, for a list of fruit growers names with return of this ad. Bridgman Nursery Co., Box 95, Bridgman, Mich.



Write today for a pair of Mated Everbearing Strawberry plants, one large packet each of the new Cereal Feterita, Sudan Grass and Silk Leaf Poppy seed, all Free for Testing. Send 10 cents for mailing expense, or not, as you please. We offer genuine Progressive Everbearing plants at 50c per dozen; 90c for 50; \$1.75 for 100; \$5.00 for 325, all postpaid. CATALOGUE FREE. The Gardner Nursery Co., Box 449 Osago, Iowa

When writing to advertisers please mention the Michigan Farmer.



The Biggest Help on the Farm



—the farmer's family is robust, healthy, strong. They want the best of everything to eat. The farmer's wife is an expert cook. She'll use only the best—that's why so many country housewives use Calumet Baking Powder. They insist on absolute purity—they know Calumet is pure in the can and pure in the baking—the most economical to buy and use. Try Calumet—if it isn't by far the best Baking Powder you have ever used, your grocer will refund your money. Received Highest Awards—New Cook Book Free—See Slip in Pound Can.



Farm Commerce.

Marketing Live Stock

How Marketing Expenses are Being Reduced

IN sections where live stock production is incidental to other systems of farming, and more especially in dairying districts where most farmers have only a small number of animals to sell at one time, there is a considerable amount of stock in excess of local demands which must be marketed by farmers in less than carload lots. The low grade of these small lots of stock, particularly of cattle, ordinarily causes them to be discriminated against unjustly, and when abnormal market conditions and fluctuations occur local buyers and shippers are compelled to purchase at large margins under market prices in order to be certain of their profit.

On account of limited local demand, a large part of the live stock of the country must be shipped to the central markets. This fact has made it possible for local buyers to operate extensively in farming sections, where the individual farmer does not produce in numbers sufficient to ship in carload quantities. The margin of profit on which these country buyers operate is often exorbitant. In some communities the buyers, contrary to law, are said to have an understanding among themselves whereby they eliminate competition and force the farmers to sell at fixed prices. To a large degree these factors account for the rapid spread of the co-operative shipping movement.

Farmers' live stock shipping associations are one of the newer forms of organized co-operation. Although for many years it has been more or less common for several farmers in a community to combine their live stock to make a carload for shipment to market, it is only within the past seven years that associations have been formed for this purpose. Co-operative live stock shipping up to the present time has been confined almost entirely to a few middle western states and sections within these states where live stock production is a side line in connection with general or specialized systems of farming operations. The extensive and rapid development of these associations during the seven years since their origin is indicative of marked benefits to their members, and the movement must be recognized as a factor of permanent and growing importance in the marketing of live stock.

Simplicity of organization and the fact that no capital is required make the co-operative shipping of live stock peculiarly adapted to communities in which more complex forms of co-operation would be impracticable. Although not necessarily feasible in all sections, especially those in which live stock generally is marketed in carload lots, or where there is insufficient stock suitable for shipment to market, or where the central markets are not readily accessible, nevertheless there are many communities in various parts of the country which would be greatly benefited by such associations.

As an instance of the benefit of having a live stock shipping association, the case of the Litchfield, Minn., Farmers' Shipping Association may be cited. The first seven years' business of this association amounted to a total of 706 cars of stock (or 14,797,054 pounds, using the average weight per car for 1913 and 1914). The average cost of marketing stock in this association for 1913 and 1914 was 33 cents per 100 pounds. This latter figure is said by farmers to be from 10 to 40 cents per hundred weight below the margin on which local buyers formerly purchased stock from farmers. Assuming the local buyer's margin to be 50 cents per

hundred weight, a very conservative estimate, the association at Litchfield, Minn., saved the shippers \$6,221.15 during the year 1914, and has saved them a grand total of \$25,155 since its organization. Considering the fact that there are about 200 of these associations in Minnesota, enormous benefit

to the farmers is obvious. It has been estimated that in 1914 approximately \$6,000,000 worth of live stock was shipped by co-operative associations in Minnesota. Officials familiar with conditions in the state believe that within a few years a large percentage of the stock sent to central markets from Minnesota will be marketed in this way.

As an adjunct to the live stock shipping business, co-operative buying is being conducted by a number of associations. Buying is confined principally to the purchase of grain and feeds in carload lots for stock feeding purposes. One association reported that during the spring of 1915 it supplied its members with corn at 12 cents a bushel less than dealers were charging.

Installs a Profitable Service



Motor Truck of Mr. Owen, with which he does a Profitable Business Hauling Farm Products for His Neighbors.

JOSEPH B. OWEN is a new type of scientific farmer. Instead of using motor trucks simply to haul produce off his own farm to the city, Owen is also engaged in the business of contracting to haul his neighbors' crops. He resigned his position as conductor on the Pennsylvania railroad to launch this new business venture in April, 1915, purchased a 1½-2-ton and a 3-ton truck for this service, and since that time has experienced no difficulty in keeping the trucks busy every day.

The trucks work every day in the week and carry full loads. In addition to hauling crops they have been used for moving furniture and last winter the 1½-2-ton truck was rented to a telephone company for six months, during which time it didn't miss a single day's work. Owen says that his neighbors who own valuable horses would rather pay him for hauling their produce to market than to put their teams on the road during hot weather.

One of the rules of Mr. Owen's business is that he does not go after the produce, but the farmers must bring it to him. Occasionally he will agree to go several miles for a full load of peaches or tomatoes, but not for less. Beginning the middle of April he operates his trucks on a regular schedule of collection, the farmers bringing their produce to specific points or stations and in sufficient quantities to warrant collecting it with the trucks. Following this schedule he can leave his farm at 4:30 in the afternoon, load his trucks at the supply stations along the route, and reach the city markets shortly after eight o'clock.

During the asparagus season the trucks haul from 200 to 500 crates a day, but as the season advances, tomatoes, peaches, lima beans, peas, sugar corn, cantaloupe and other crops are carried. Mr. Owen charges six cents a basket for hauling tomatoes and the trucks average 1,000 to 1,200 baskets a day. One day last summer 1,400 baskets were transported.

It is not an uncommon thing for Mr.

Owen to begin his day's work at two o'clock in the morning and haul two heaping loads into the market before breakfast. It requires about four hours for the trucks to cover the nine miles to the market, including time for loading and unloading. The same day the trucks start on another trip at four o'clock in the afternoon and do not return to the farm until early the next morning.

Between the trips to market, Mr. Owen spends considerable time in sorting out the baskets that have been delivered to his yard by the farmers, stacking them to expedite the loading and so as not to injure the produce. Almost any day in the season one can see from 500 to 1000 baskets piled up in his yard. He is highly pleased with the financial results of his efforts and at the same time he is rendering a substantial service to the community by providing an economic means of marketing the products of the small farms.

FRUIT AND VEGETABLE SHIPPERS VIOLATE LAW.

The officials in charge of the enforcement of the Food and Drugs Act report that inspectors have found several interstate shipments of packages of fruits and vegetables such as grapes, tomatoes and berries, which contain no statement on the packages as to the quantity of contents. The net weight amendment to the Federal Food and Drugs Act requires that all packages of foods which are shipped into interstate or foreign commerce must be marked plainly and conspicuously with a statement of the quantity of the net contents, either by weight or measure. Shippers who violate the law by failing to mark the quantity of the contents of each package of fruits and vegetables they ship into interstate commerce are liable to criminal prosecution. Several shippers have already been cited to hearings under the Food and Drugs Act for violating its provisions in this respect.

Selling in the Dark

I RECENTLY received a letter from a Michigan farmer saying he had several barrels of apples to sell and asking me to see the local grocers in my place and get their figures on them. His apples were principally Baldwins, Ben Davis, Northern Spy, and Belleflower. He evidently had the idea that as apples were selling in my village at a very high price, the local dealers would be delighted to find a place where they could get apples at a reasonable figure.

I knew that there was no probability that he could sell to our local dealers, as the price they charge for apples is no index of what they pay. Often the apples that are sold at a fancy price on the city and suburban markets have been purchased at a very reasonable price in the Chicago wholesale market.

The jump in price comes between the wholesaler and the consumer. This is not mainly the fault of the retailer. He simply has to charge enough to make himself safe; for he must peddle the apples out in peck lots and take chances on some of his stock rotting and of delayed payments on the ones sold; as well as occasional defaults in payment.

So the producer need not think that the retailer is basing his charges on high prices paid.

I consulted the groceryman that I thought most likely to buy the apples in question, and his answer was: "I would not think of buying from the producer, as I would have to buy in the dark. I make it a point to see my apples before I buy them, and hence buy only on South Water Street, Chicago. Besides, the apples you name are not the ones my customers are in the habit of buying from me. I find that if I put in my store apples that I have not been in the habit of selling, it is almost impossible to get rid of them. Last year I bought a lot of Belleflowers from a Michigan man. I could not dispose of them and most of them spoiled on my hands. It is surprising how much habit counts with customers. The Baldwin and Northern Spy are especially fine apples, yet my customers have gotten out of the habit of buying them, and if I carried them I would have to carry the others anyway or lose trade. I will say, however, that many of the apples I see shipped into South Water street are so poor that I would not want them in my store. And that makes me all the more determined not to buy apples unseen."

Every producer of apples on a small scale is up against this situation. The distance between the producer and the consumer of apples is widening all the time, with the increase in size of the cities.

The only direction of progress left open to growers of apples in small quantities is to form co-operative fruit associations. Such associations would be able to maintain a commission house or fruit agency in large distribution centers. It is the only way to produce a sure and safe market for the apples of the small grower. Otherwise he must continue to sell his apples in the dark, as he is doing at the present time, so far as the large markets are concerned.

Illinois. H. F. THURSTON.

AMENDMENT TO THE POTATO QUARANTINE.

Hereafter shipments of potatoes from the Dominion of Canada certified by the shippers to be as sound as is commercially practicable and to contain no more than 10 per cent of tubers showing traces of disease, will be admitted at any port of entry of the United States, instead of at certain designated ports only, as in the past. The shipments, if accompanied by certificates of soundness as provided, will not be held by collectors of customs for inspection, except on special notification from the Federal Horticultural

Board. An order amending the rules and regulations of the potato quarantine to this effect has just been issued by the Secretary of Agriculture.

Under the amended regulations the importer must apply to the Federal Horticultural Board for a permit for importation of potatoes as at present,

designating the desired port of entry. The foreign shipper must enter the number of such permit on his certificate of soundness. The Federal Horticultural Board has prepared and will send to all applicants for permits forms for shippers' certificates of soundness.

Advertising Farm Products—VI.

By I. J. MATTHEWS

IN the absence of a personal call from a salesman, other avenues to the buying instinct of the customer must be used. In the cases of farm articles, it is almost impossible to have salesmen call for orders except in disposing of fruits when backed by a large company, such as the California Fruit Growers' Exchange. The letter has to be used in place of a salesman. It is a silent salesman but just as the salesman should be attired in modest yet substantial garb, so the letter must be artistically adorned. Letter-heads for farmers ought to be plain and avoid any large claims or promises that are impossible of fulfillment.

The letter-head should be done on substantial stationery. In some instances colored stationery is used to correspond with the color that has been selected for the farm but the great bulk of stationery that the farmer uses in pursuance of business calls or in following up answers to advertisements will be done on white paper. If the farm stationery is colored to represent the color chosen as significant of the farm products, then to be consistent the labels, shipping tags, stickers and all other advertising matter should be of the same color and it would be well-nigh impossible to live up to this idea in all cases.

It is possible only to outline the arrangement of the various items on the paper because this will vary with the individuality of the farm. In general, at the top of the sheet should be the firm name or the farmer's name, the trade-mark, a simple statement of what is usually for sale, and the place. No stationery can be expected to get results in short-time tests but poor letter-heads have been known to lose many a sale for the producer. The idea that a man's character can be told by the stationery he writes upon has been so widely accepted that prospective purchasers immediately consign to the wastebasket without a reading the letter written on poor paper.

In this connection, when the farmer puts his name on stationery, he should include also his wife's name if she has been a partner in the business. But few farm successes could eventuate without the help of the wife of the farmer and in justice, it seems only fair that the firm name should be put on the letter-head rather than a single name. The success of a manufacturing business is not, to the same degree, dependent upon the interest of the wife of the manufacturer and this explanation is given for those who would attempt to liken the farm to a purely manufacturing enterprise.

The business farmer owns a typewriter. In the absence of a typewriter, the handwriting must be plainer and thus it becomes necessary to take more time in writing. This extra time will in a few years pay the cost of a typewriter. The typewritten letter will always command attention over the hand-written letter unless the writer be a very exceptional penman. The farmer in business must have a typewriter, for a letter so written is always legible and easily read. Every act of the farmer in advertising should be subordinate to the thought that consumers are busy people and anything that will economize their time and point out what they may desire will be appreciated by them and their appreciation mirrored in larger sales.

The letter-head is a most important adjunct to the farm business. The

cheap stationery sometimes used is not a suitable salesman. It does not get business; it only serves as a vehicle for conveying thought and even the thoughts are not likely to "get across" until the stationery has been inspected. Good paper bearing the firm name, trade mark, and address, accompanied by a simple, truthful, and forceful statement of wares for sale is the best medium through which to reach the prospective purchaser.

Calling Cards Should be Plain.

Calling cards are used by farmers; they have proven very serviceable and seem destined to be more useful as the business of farming more nearly approaches a scientific basis. The calling card serves as an introduction. The letter is used in connection with inquiries or in follow-up literature and as such, it is well for the letter-head to announce the business but the calling card only serves to get an audience with the prospective customer and this purpose is best served by announcing only the name of the caller. Explain the business on the card and what happens. It goes to the housekeeper; she knows the sender has a selling talk to be given on a moment's notice, and forthwith, Mr. Salesman is likely to find that Mrs. Housekeeper is not at home today. Even though an audience be secured, the prospect is prejudiced by the forewarning, whereas if the card contains nothing but the name, it creates an air of mystery that will at least get an audience. The housewife will think perhaps Mr. Salesman is there for some good advice or perhaps to herald the coming of a friend—at least, she will know what the business is and her mind will not be prejudiced. Even the court will not accept a juror whose mind is prejudiced and the calling card may well embody the same idea.

Under present conditions, calling cards are good selling helps for farm commodities. They must be reinforced coupled with a sense of the importance of the market to be had at the door. Also, the billboard artistically placed, together with judicious use of periodical advertising have been found to be profitable methods of calling public attention to farm products that smack of quality.

MICHIGAN CROP REPORT.

Wheat.—The condition of wheat as compared with an average per cent is 86 in the state, 84 in the southern counties, 89 in the central counties, 92 in the northern counties and 85 in the upper peninsula. One year ago the per cent was 85 in the state, 83 in the southern counties, 84 in the central counties, 91 in the northern counties and 96 in the upper peninsula.

The total number of bushels of wheat marketed by farmers in November at 75 flouring mills is 110,814 and at 77 elevators and to grain dealers 109,692 or a total of 220,506 bushels. Of this amount 169,341 bushels were marketed in the southern four tiers of counties, 38,196 in the central counties and 12,969 in the northern counties and upper peninsula.

The estimated total number of bushels of wheat marketed in the four months, August-November, is 4,250,000. Forty-eight mills, elevators and grain dealers report no wheat marketed in November.

Rye.—The condition of rye as compared with an average per cent is 89 in the state, 88 in the southern counties, 91 in the central counties and 93 in the northern counties and upper peninsula. One year ago the per cent was 90 in the state, 86 in the southern counties, 98 in the central counties, 93 in the northern counties and 99 in the upper peninsula.



He Carries Money On His Back!

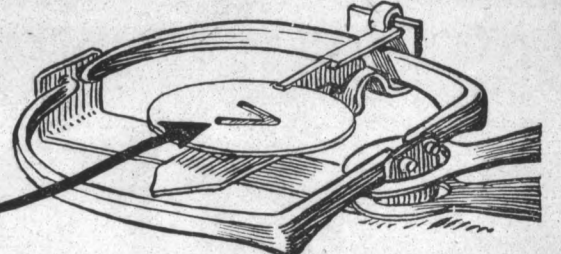
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THIS IS THE LAST EDITION.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKET.

Thursday's Market.
December 21, 1916.
Cattle.

Receipts 2694. Live stock was badly delayed this week and stock that should have arrived and been sold on Wednesday was not unloaded until Thursday; the railroads are in terrible shape and the snow does not improve matters. They are doing all possible but are so cramped for room it is a hard proposition and it seems to be getting worse. There will be no market here Monday next, Christmas day.

In the cattle division the market opened fairly active but on Thursday everything but canners, bulls and cutters were dull and draggy and 25@50c lower than last week. A few went back for feeding and Bray shipped 350 cows and canners to Chicago, which kept this class steady. Milch cows were dull and few good ones were in the receipts; the close was dull at the decline with quite a bunch of late arrivals going over unsold. Best heavy steers \$8@10; bst handy weight butcher steers \$7.50@8; mixed steers and heifers \$7@7.75; handy light butchers \$6@6.75; light butchers \$5@6; best cows \$6@6.25; butcher cows \$5.25@5.50; common cows \$4.50@5; canners \$4@4.50; best heavy bulls \$6@6.50; bologna bulls \$5.25@5.75; stock bulls \$4.50@5; feeders \$6.50@7; stockers \$5@6.25; milkers and springers \$40@75.

Bishop, B. & H. sold Kamman B. Co. 25 steers av 917 at \$7.25; to Hammond, S. & Co. 8 cows av 860 at \$4.50; to Mason B. Co. 2 do av 1125 at \$6.90; to Bray 8 do av 947 at \$4.50, 1 do wgh 1240 at \$5.75; to Thompson 1 do wgh 1090 at \$6.25, 3 bulls av 830 at \$5.75, 1 do wgh 1160 at \$6, 1 heifer wgh 610 at \$5.50, 1 bull wgh 1060 at \$5.50, 1 do wgh 1150 at \$6.50; to Nagle P. Co. 12 steers av 792 at \$6.60, 10 butchers av 730 at \$6.25; to Sullivan P. Co. 4 do av 742 at \$5, 16 do av 947 at \$6.50, 12 cows av 1018 at \$5.85; to Bernfeldt 6 steers av 770 at \$6.60; to Bray 6 cows av 1030 at \$5.75, 9 do av 872 at \$4.75, 15 do av 1018 at \$4.75, 2 do av 785 at \$4, 1 steer wgh 1170 at \$7; to Sullivan P. Co. 7 cows av 910 at \$4.50; to Breitenbeck 21 steers av 955 at \$7.75; to Bray 6 cows av 892 at \$4.60; to Rattkowsky 7 do av 954 at \$6, 3 heifers av 977 at \$7; to Goose 8 butchers av 565 at \$5.35; to Parker, W. & Co. 5 cows av 990 at \$4.50, 2 do av 1090 at \$4.50, 1 bull wgh 1290 at \$6.50, 5 steers av -085 at \$8, 8 do av 821 at \$6.75, 4 do av 1012 at \$8.50, 4 cows av 1047 at \$5.50, 54 butchers av 880 at \$6.50; to Allen 13 do av 876 at \$6; to Bray 28 cows av 1011 at \$5, 25 do av 874 at \$5, 17 do av 950 at \$4.75.

Veal Calves.

Receipts 832. The veal calf trade was active from start to finish, best grades selling at \$12@13; mediums at \$9@11; heavy \$6@7.

Sandel, S., B. & G. sold Thompson 9 av 150 at \$11, 4 av 135 at \$12.25, 4 av 140 at \$12.50, 2 av 110 at \$8, 2 av 270 at \$8, 9 av 140 at \$12; to Rattkowsky 1 wgh 150 at \$7.50, 4 av 105 at \$10.

Bishop, B. & H. sold Thompson 9 av 150 at \$12.50; to Hammond, S. & Co. 3 av 180 at \$13, 8 av 145 at \$12.25; to Mich. B. Co. 12 av 160 at \$12.

Haley & M. sold Tasmockey 2 av 145 at \$12.50, 22 av 150 at \$12.50; to Hammond, S. & Co. 13 av 160 at \$13, 6 av 135 at \$12, 2 av 135 at \$9.

Erwin, S. & J. sold Rattkowsky 1 wgh 110 at \$10.

Sheep and Lambs.

Receipts 5552. The sheep and lamb trade eased off a little on Wednesday but on Thursday the 25c decline was regained and the market was active at early week's prices, the tops bringing \$13.25. Best lambs \$13@13.25; fair lambs \$12@12.75; light to common lambs \$7@10; yearlings \$9@11; fair to good sheep \$8@8.75; culls and common \$5@6.

Haley & M. sold Thompson 18 lambs av 55 at \$11; to Nagle P. Co. 135 do av 75 at \$12.25, 9 do av 7 at \$11.60, 116 do av 65 at \$11.75, 85 do av 75 at \$12.75, 16 sheep av 115 at \$8, 22 do av 120 at \$8.75, 3 do av 140 at \$8.50, 10 do av 98 at \$7.25, 2 do av 135 at \$6, 4 yearlings av 90 at \$10.

Erwin, S. & J. sold Wilson & Co. 30 lambs av 85 at \$13; to Mich. B. Co. 14 sheep av 115 at \$9; to Nagle P. Co. 147 lambs av 80 at \$12.85; to Thompson 18 do av 70 at \$11.50; to Wilson & Co. 31 do av 90 at \$12, 8 do av 70 at \$12, 64 do av 80 at \$13, 6 do av 65 at \$12.

Hogs.

Receipts 8297. In the hog department the market was steady with Wednesday, pigs selling at \$8.75 and yorkers and heavy grades \$9.50@10.

Veterinary.

CONDUCTED BY W. C. FAIR, V. S.

Clinging Afterbirth.—I have a fresh cow and she has not yet cleaned. This is a similar experience to what I had last winter, as several of my cows did not clean after calving. In some cases I have removed cleanings from the cows and some of them I have let go without treatment, but some of them seemed to do well. How can I prevent ailment? C. B. K., Woodville, Mich.—When one or more cows in a dairy mscarry or when many of the cows do not clean promptly after calving, it is fairly good evidence of the presence of contagious abortion in the herd. It is considered good practice by Vets. and remove the afterbirth, it it does not come away in 24 hours. Washing out dairymen to cautiously and thoroughly uterus, if done properly and with non-irritating solutions is helpful, but as it is often done, it is quite harmful and had better be dispensed with. The commercial coal tar preparations are most commonly used in the strength of one to 99 of water and cow should be treated daily for a few days. The cows should have good care, be kept in a clean, well ventilated barn, but not exposed to the cold or stormy weather.

Scours.—Our five-year-old Holstem cow has lost all her calves; they appear to be all right at birth but after sucking her a few days, they took the scours and died. When this cow's milk was given to another calf, it was affected the same way. What do you advise me to do? A. C. H., Kent City, Mich.—Are you sure that your cow and calf premises are free from infection, which is almost certain to produce scours in calves. I believe it is unreasonable to attribute the cow's milk as being the infective cause of calves' death. Clean and disinfect the cow stable and calf pens; besides, promptly treat the navel of every young calf and be sure to have your cows calve in a clean, thoroughly disinfected stall.

Sprained Stifle Joint.—We have a four-year-old mare that has stifle ailment which makes leg stiff and swollen. This is not the first time she has had stifle trouble and I would like to cure her if I can. R. H., Gratiot Co., Mich.—Give her a teaspoonful of acetate of potash in soft feed or water once a day for 15 days. Mix together equal parts turpentine, aqua ammonia and raw linseed oil and apply to stifle every two or three days, or clip off hair and apply one part cantharides and five parts fresh lard every two weeks. This last mentioned ointment will blister.

Mild Attack of Lymphangitis.—Have a horse whose hind leg is sore and tender on inside of thigh. I have been giving him sweet spirits of nitre, but it fails to help him. C. B. L., Vanderbilt, Mich.—High feeding, lack of exercise, breathing four air, and constipation are common causes of this kind of case; besides, allowing a horse to stand out in cold, bleak weather also produces this lymphatic trouble. Give him one quart of raw linseed oil or feed well salted bran mash or vegetables to open his bowels. Rub thigh with camphorated oil and give him a teaspoonful of acetate of potash three times a day.

Bone Spavin.—I have a five-year-old horse that went lame 14 months ago and which has been lame nearly all the time since. Our local Vet. fired him September 1, but he is still lame; shows it most when turning. What additional treatment do you recommend? C. F. C., Norvell, Mich.—Mix together one part ground nux vomica, one part powdered sulphate iron, one part powdered nitrate of potash and three parts ground gentian; give him a tablespoonful at a dose in soft feed two or three times a day.

A. W. S., Bellevue, Mich.—Your calf will drink and eat when it is good and hungry.

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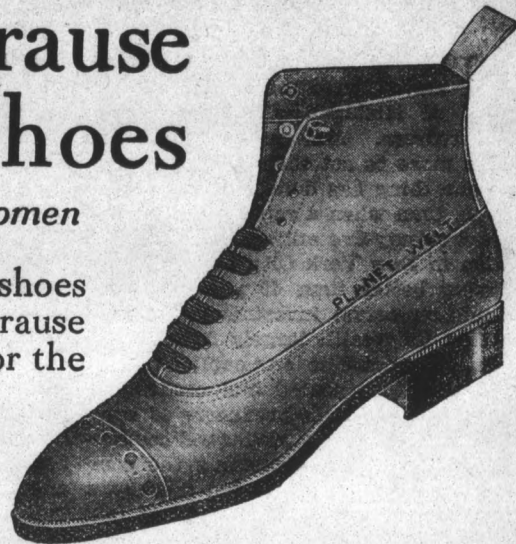
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FOR SALE Stallion colts by Imposant—79405 (79835) F weight 2340 lbs. From mares as good. Ages from two months to three years old As as you can good find any where. Chas. Osgood & Sons, Mendon, Michigan.

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Shetland Ponies For Sale or exchange for heifers. Ponies are well broke to ride or drive. Price from \$50 to \$130. M. L. Ramseyer, Elkton, Mich.

The Milk Situation In Mich.

Address Delivered by R. C. Reed, Field Secretary of The Michigan Milk Producers' Association, at the Recent Annual Meeting of the State Association of Farmers' Clubs.

NOT like men, but like serfs and slaves, have the milk producers of Michigan plead for respite and redress. And no one thing has done more to set their teeth on edge, no one thing has done more to arouse them, than when a representative of a great twenty-five million dollar corporation in New York City that has been paying better than 40 per cent dividends on actual investment, that has gotten its wealth largely from Michigan milk, came to our capitol city in response to repeated and earnest requests of the milk producers of their factories to meet a producers' committee, and instead of meeting the committee like men, he treated them as a slave driver would his slaves, and told them to go back to their cows. This seemed the last straw. They had made their final cry, there was nothing more left to do, but to get lime in the spinal column. The result of this last insult and rebuff was the formation of The Michigan Milk Producers' Association. These men believe that they were born to be men and not slaves. They believed that they had a right to have something to say about the selling price of their product.

After that memorable day, May 23, 1916, when this organization was brought into existence and left to be the radiating center, the dynamic force of this great movement in Michigan, it was surely without form, and void.

For days and weeks the board of directors sought for a new way out. They sought the path that led toward the rising sun of promise. What shall be the resources, the policies, the slogan of this organization, that had been created by the good men and women of Michigan and left to our care and development.

It means much to finance a great state reform movement. Sufficient funds must be forthcoming to provide for existence and an emergency. Where shall this be found?

Our faith in the men and women of Michigan asserted itself again, and we said they will furnish the funds if we can get this matter properly before them. Then we established the Endowment or Guarantee Fund Proposition.

We have appealed to a few only of the loyal men and women to place at the disposal of the board of directors of this organization a sufficient sum of money to insure its permanence, and their response will serve as well as anything to show to what extent they have been aroused. To what pitch of patriotism they have reached, when I tell you that in one county, with only a part of the territory covered, \$5,000 was subscribed. Other territory adjacent to this was reached and now \$10,000 has been placed subject to the call of the board of directors, to insure the permanence of this work, and still the work goes on. We are quite sure that we have the foundation for a work of permanence, a work that shall endure through years of time and through many ordeals that shall beset the business of milk production.

Every milk producer in Michigan should be patriotic enough to do his full share in the maintenance of this great work. Our plan of finance is well established and is giving the best of satisfaction.

Our Policy.

The policy of this organization is constructive and not destructive. Everywhere we desire to avoid strikes and lawsuits and neighborhood divisions. Always we desire to build public sentiment to the justice of our claims, to a price for our product which will equal the cost of production and a reasonable profit for our business.

The Slogan.

The slogan of this organization is

education, legislation and co-operation. About the manufacture of no other product has there been such ignorance as about the manufacture of milk. The man who has but a small herd of cows, who produces but a small amount of market milk has had no idea of the cost of production. He has been content to go on year after year in the production of this product without knowing its cost, without knowing its value, without knowing what he was to receive for it. He has worked himself over hours, often 16 hours a day, his good wife has been the sharer of his labor without reward; his children have also contributed of their labor and energy. All this and an absolute indifference to the fact of profit or loss in the business.

And when the state of Michigan endeavored to assist in determining the cost of production, so dense was this ignorance he did not want to know, he did not want to be disturbed, he did not want to awake to find himself a loser and it was by the most persistent endeavor on the part of public-spirited citizens that a sufficient number of men were induced to allow this investigation to be made in their herds around about Howell. The investigation has been made by and at the expense of the state. Finally a sufficient number was secured and the investigation begun by the state on the first day of March, 1916.

When the report was completed for this month it showed that in these herds (as good as there are in Michigan), that it cost \$1.83 to produce a hundred pounds of milk. The selling price of this milk was \$1.52 per cwt., making the producer a loser of 31 cents for every hundred pounds of milk produced in the month of March.

When the month of April was completed it was found that the cost of production was \$1.85 per cwt., and the price received was \$1.44, making the producer a loser of 41 cents on every hundred pounds of milk produced in April. Since that time varying conditions and varying prices have prevailed.

Under pressure of the Michigan Milk Producers' Association the price was forced to \$2.00 per hundred pounds for November. A great protest went up over the land that the farmer was taking an undue advantage of the situation of scarcity, but the report of the cost of producing November milk will show this to be not less than \$2.17 per hundred pounds, so the milk producer is still behind the game, but all over the state producers are becoming awakened to the situation and are rallying well to the investigation.

Not only are we trying to educate the milk producer to a better knowledge of this business, but we are using our best offices toward the manufacture of a better product. We are also setting before the consumer a better knowledge of the nutritive value and the cheapness of its nutrients as compared with other foods.

Thousands of pieces of literature have gone from this association to give to the consuming public a knowledge of the nutritive value of our product, and the many responses received assure us of the value of this feature of our propaganda.

Legislation.

As far as this organization is concerned nothing has as yet been done along the line of this part of our propaganda and we are not at liberty to speak as to what our plans are.

* * *

But what of the proposed embargo? You cannot produce cheap foods from high-priced labor, high-priced equipment, and high-priced material, and if the consumers of the city, force on the American farmer the embargo on the

products of the farm, it will be a boom-erang that will in future years come back to them with an awful retribution, with thousands of abandoned farms, with city population so congested that there is not housing room, with food production decreasing until a food famine stares us in the face. Must the producers of food of this nation be still farther discriminated against by an embargo and restrictive measures?

Co-operation.

Ignorance and prejudice, are the insuperable barriers to the progress of every reform movement. These are the rocks on either side of the channel of every successful commercial enterprise. These are the hell-gates that must be blasted away before clear sailing can be gained. Education and co-operation are the dynamite cart-ridges that must be used to clear away ignorance and prejudices. Our hope of success rests no more on the prospect of removing ignorance than it does on the hope of eradicating prejudice. These are the things that thwart the man whose interests are identical with ours, who sends his crop to the same market, who travels the same road, patronizes the same school, lives under the same government.

The farmer people can have any thing they desire if they are fully possessed with the spirit of co-operation, and we believe that the milk producers of Michigan are getting a new vision of their opportunity and their responsibility as they have shown such a splendid spirit of co-operation in the work of this organization.

That leads us to ask this question: What has been accomplished and what of the milk situation in Michigan today?

We divide the milk producers of Michigan into two classes. One class that is producing milk and selling it at a loss and know it. The other class that is producing milk and selling it at a loss and don't know it. Notwithstanding the considerable advance in price of recent date, milk production is carried on today at a tremendous loss.

As we have made the survey of the state we find that the price obtained for milk in the different parts varies from \$1.00 per hundred pounds to \$3.00 per hundred pounds. Or, in other words, milk is selling in Michigan today from two to six cents per quart to producers. The milk producing districts of the state have changed greatly in the last few years, naturally those sections lying close to the great center of population should be producing milk for those centers, but as we visit those districts we find that the number of cows has been greatly reduced in the last few years. When we question these people as to why this is so, the reply is, "We could not continue at the price obtained; we had made milk at a loss long enough." We then visited the new milk areas of the state where men are just beginning the business of milk production. These men are enthusiastic and are expecting great things: The fact is that these men are a whole day's rail haul from the great markets, and that they do not know the milk-producing game. They do not know that the nearby city producers have been driven out of business, they don't know the cost of production and the consequent loss, they don't know that many milk receiving stations near the city have been closed down because there was no profit in the production. They, too, must work out their experiment and eventually abandon the business they have tried unless an increase in the price of the product can be obtained.

But the call of the city man comes to us now. How about our supply of milk? How about feeding of our babies and supplying of our tables with this indispensable food product? We reply to you, "That is up to you; we have been concerned long enough about giving cheap and nutritious food to the people. It is up to us to get a profit on our business or quit the business."

If the city was as interested in us as he wishes us to be in him, many of them would go back to the poor old gray-headed fathers and mothers that they have left on the farms alone, unaided to make the battle of life against awful odds in their declining years.

The high cost of living is not all attributable to the high cost of production, but the high cost of production is largely attributable to the high cost of labor.

In the years past the milk producers of Michigan have put into their business their labor at a cheaper price than the open market would pay for that of the most ignorant Dago.

The profit on the milk business in the past has been to the distributor and to the plants that have been making condensed milk and other milk products. Statistics show that these concerns have been making tremendous profits, these profits varying from 25 to 60 per cent per annum.

In the recent raise in the price of distributed milk, 40 per cent of the raise has gone to the producer and 60 per cent to the distributor.

Why should one branch of this business succeed to such a degree and the other branch fail so signally? This question is easy of solution, it is easy of reply. The man interested in the distribution of milk with but comparatively small investment at first have given strict heed to the organization of their business. They have watched the business end of the game. They have thought, they have used their brain more than their brawn, they have succeeded.

The farmer has used his brawn, he has tugged and lifted, he has worked over hours, many times putting two days' work into one 24 hours. He has not co-operated with those in the same business, he has not organized. He has gone singly and alone to meet the organized forces of the buyers. His own narrowness and prejudices have been his undoing. Many efforts have been made to effect co-operation of the tillers of the soil. Your own organization is a splendid example of this. These have all been instrumental in developing the co-operative idea and educating the people to the necessity of giving more thought to their business.

How can we help the producer and consumer, were the questions that came to us for first analysis. A better price and a better product is our aim. For this purpose were our funds gathered and for this purpose are we expending them. Our organization has worked incessantly, in season and out of season, for the accomplishment of this purpose. We have expended of the funds entrusted to our care up to date, about \$1,450, and as a result of this the milk producers of Michigan are receiving an advance in price that aggregates better than \$35,000 per week.

A greater victory than this is the conception that they have gained of the privilege and responsibility of a co-operative effort and a better knowledge of their business.

That we may properly safeguard the future of this great nation; that we may not further deplete her soil fertility; that we may not rob unborn generations of their heritage, let us safeguard the dairy industry; let us make this business by our foresight, by our organization and by our co-operation a monument that will prove to coming peoples that we are worthy scions of those illustrious patriots who have handed to us this goodly heritage.

SOME GOOD COMBINATIONS.

No. 19.

Michigan Farmer, 3 yrs., wk.	\$1.25
Designer & Dressmaking, mo.75
Boys' Magazine, mo.	1.00
Poultry Success, mo.50
Every Week	1.00

Regular price

OUR PRICE ONLY \$2.25.

No. 20.

Michigan Farmer, 3 yrs., wk.	\$1.25
Christian Herald, wk.	2.00
Review of Reviews, mo.	3.00
McCall's, mo.50
Youths' Companion	1.75

Regular price

OUR PRICE ONLY \$5.50.

Order by numbers. Add Fifty Cents

after February 1.

Send all orders through the Michigan Farmer.

Results from One Insertion.

"I had 37 inquiries directly traceable to your advertisement, resulting in sales amounting to more than \$1,300; 86-100ths of one per cent is a rather small percentage to invest in advertising. I had no stock left to offer the last 28 inquirers."—H. F. Pelham, Jackson, Mich.

Annual Meeting of Michigan State Grange

DELEGATES from 82 of the 83 counties of the state, as well as a large number of other Grangers, met in session at Lansing in the Prudden Auditorium from December 12 to 15 inclusive, to discuss questions of vital importance to the Grange and the rural interests of the state. The meeting was noted for its attendance, intense interest at all the sessions and the harmony and dispatch with which the work of the convention was disposed of.

The chief thing of interest in the early days of the convention was the master's address, which was a most able discussion of some of the live Grange questions of the day. Master Ketcham delivered this address in his usual forceful manner and it was received with acclamation by the convention.

Grange Rallies.

In a review of work of the past year Mr. Ketcham said that although Michigan did not follow the plan of other states in holding field meetings, there were two special events during the past year which did much to promote better Grange spirit and work. The first was the special Pomona meetings during the week of January 17-22, during which time 70 Pomonas were visited by representatives of the State Grange. During the last week of July four consecutive meetings were addressed by Hon. Oliver Wilson, Master of the National Grange. These meetings did much to stir up Grange enthusiasm and the attendance set a new record for meetings addressed by the National Master. Numerous Pomona and subordinate Grange rallies and picnics also had a good effect in arousing the Grange spirit during the past year.

Michigan took an active part in the National Grange meeting at Washington which was honored by the attendance of President and Mrs. Wilson and a short address by the President. This is the first time that the National Grange has been honored by an address of welcome given by a president of the United States. At the semi-centennial anniversary celebration, Worthy Chaplain Olivia Woodman completely captured the audience by her talk on early Grange reminiscences. Michigan was also honored by Sister Stockman appearing on the program of the lecturers' conference, and also for a talk on home economics before the National Grange.

Work to Make Prohibition Effective.

On account of its prominence in the work for prohibition the Michigan Grange can duly rejoice in the "dry" victory of November 7. Although our aims have been accomplished in this respect, we must not rest content but must give thoughtful consideration to constructive legislation necessary to make the prohibition constitutional amendment effective. This legislation should not be made extreme by radical temperance advocates, but the laws of various states where prohibition is now effective should be studied and their best provisions copied for our own use.

In his discussion of taxation, Brother Ketcham said that it was the American habit to save our discussion of the tax problem until we visited the tax collector, when we would express in no kind terms our idea of the enormous rate and inequity of our assessment. We should act on tax problems before appropriations are made and assessments spread if we are to be rated as anything but kickers. The enormous increase in our total tax budget is worthy of consideration. In 1906 Michigan raised for all kinds of taxes, twenty-six and one-third million dollars. In 1915 the total amounted to sixty and one-half millions, an increase of 130 per cent for the decade. Many are led to believe that the principal cause of this increase is the increase of state taxes; this is not so, as in 1906 the proportion of the total levy

for state taxes was 12.8 per cent, which in 1915 was only 15.7 per cent. Therefore, if we are to advocate tax reform we must keep a watchful eye on local tax situations as well as those of the state. There are two methods of solving our tax problems; one is the establishment of the budget system to take care of the state expenses of our state institutions and the other is to rectify the unequal taxation of land values. In the reductions that the state board of equalization made in the valuations set by the tax commission, Wayne county received 42 per cent of the total. The amount taken from Wayne county's valuation as set by the tax commission was but \$43,000,000 less than the total value of the Upper Peninsula. The rate as now fixed must hold for three years, but to remedy this glaring inconsistency, influence must be brought to bear upon the legislature to pass laws eliminating the duplication of the work of the tax commission and the state board of equalization. The tax commission could well do the work of both committees.

The High Cost of Living.

In discussing the subject of the high cost of living Mr. Ketcham said that consumers, middlemen and producers' organizations were busily engaged in a general campaign of agitation, each claiming that the blame cannot be properly charged to them. Grand juries, embargoes, boycotts and investigations of various kinds are among the suggestions advanced to relieve the situation. In the heat of such a widespread agitation it is hard to sift the truth from exaggeration and misinformation. The farmer has the best opportunity he has had in many a day to present his side of the case and receive for it careful consideration. The present high price for farm products is caused by a world shortage of production, due to unfavorable climatic conditions during the past season, coupled with the great scarcity of farm labor. Owing to increased wage levels in the city, laborers are flocking to industrial centers and in consequence we see an increased demand for farm products. Contributory causes are hand-to-mouth methods of living practiced by many city residents, the possibility of speculative control of perishable food products, monopolistic control of our meat products and the removal of a large share of the world's producers into fields of destruction. Back of these there is one underlying cause that has been gradually developing, and that is that decreased production by the farmer is primarily caused by the fact that he is not getting adequate financial returns for his labor. Surveys show that the average farm labor income is about \$350, and in many cases the farmer receives an income smaller than that of his hired man. Many progressive farmers have found by applying cost systems common in other industries that their business does not pay at prices paid on a ten-year average, and they have disposed of their holdings and gone into other callings. One phase of the high cost of living agitation which the Grange must handle without gloves is the proposal to place an embargo on food stuffs. With cheaper food prices, and wage levels in the city remaining where they are, still larger numbers of people would leave the farm to enter other lines of activity. We should be no less emphatic in our declaration on the subject of the boycott. Millions are expended for pleasure and entertainment, yet we hear of economies being urged in the purchase of the essentials of life. Why not put a boycott on non-essentials where dollars are involved rather than on food products where pennies are at stake? Why wail about a cent or two per quart in a food product and in contrast pay double the price paid two years ago for the latest creations of the milliner and shoe shop? The high cost of

living today is wrapped up in the problem of distribution and the spirit of co-operation. Both producers and consumers should come to a better understanding of the relation each bears to the problem and together move forward to its solution.

Co-operative Marketing.

In commenting upon co-operation in marketing, Mr. Ketcham said that the present general economic pressure upon farm people has forced these questions into the limelight. The spirit of co-operative effort is better understood, farm people are being trained in the selling art, and a better grade of products are being offered for sale. Following the instruction of last year, the executive committee has worked out a plan for the organization of co-operative selling associations in Granges. Two deputies who are thoroughly posted in the theory and practice of such associations are subject to the call of any Grange desiring their services. The interest in the problem of marketing taken by the dairy and food departments, the agricultural college through its market director, and the federal government is encouraging. It is regretted, however, that any friction should arise among these various agencies and it is hoped that the whole movement may not be hindered by petty contentions.

Other subjects brought out in Mr. Ketcham's speech, were the need of a State Grange paper, the value of the National Grange Monthly, and the need of more extensive and stronger organization in the work of solving the new problems of the farmers today.

The following is a condensed financial statement as given in the annual report of the treasurer:

Invested Securities.

Bonds and securities on hand Dec. 1, 1915.....	\$41,000.00
Bonds and securities bought	1,000.00
Bonds and securities, Dec. 1, 1916	\$42,000.00
Notes of Patrons Mutual Fire Insurance Company	4,000.00
Cash on hand Dec. 1, 1916...	2,241.83

Total invested funds.....	\$48,241.83
Interest due and uncollected	100.00
Cash in general fund, Dec. 1, 1916	1,664.79

Total resources, Dec. 1, 1916 \$50,006.62

Invested Funds Cash Balance.

Cash on hand Dec. 1, 1915...	\$ 2,545.00
Interest collected 1916.....	2,296.83

Total	\$ 4,841.83
Transferred to general fund	1,500.00

Bond purchased	\$ 3,341.83
	1,000.00

Cash on hand in invested funds	\$ 2,341.83
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Classification of Disbursements.

Session of State Grange.....	\$ 7,611.96
Expenses of executive committee	1,250.43
Expenses of special committee	153.76
Sixth degree fees paid National Grange	113.00
National Grange dues.....	2,294.95
Fifth degree fees returned to Pomona	24.50
Supplies purchased	694.70
Printing and stationery.....	874.26
Salaries of state officers.....	2,780.00
Co-operation	2,066.66
Organization	380.66
Supervision	668.46
Rallies	1,261.20
Lecturers' department	476.89
Secretary's office expense...	5.08
Postage	475.25
Per cent on supplies sold, paid to secretary.....	137.07
Contribution to dry campaign Michigan Patron to officers whose Granges do not subscribe	500.00
Express on bonds, Pontiac to Lansing	147.75
Insurance on Grange property	10.90
	1.80

Total disbursements	\$21,938.28
Cash on hand.....	1,664.79

\$23,603.07

Classification of Receipts.

On hand Dec. 1, 1915.....	\$ 1,714.57
From co-operation	7,258.55

Fifth and sixth degree fees..	305.00
Transferred from invested funds	1,500.00
Dues from Subor. Granges..	11,172.21
Supplies sold	843.39
Nat'l Grange extension fund	140.00
Lecturers' Bulletin	18.00
Grange Life Assurance Association, per cent on renewal premiums	231.35
Sale of Grange property....	150.00

Total receipts\$23,603.07

Overseer's Report.

In giving the overseer's report, Mr. C. H. Bramble said that during the past two years many of the reforms which the Grange has advocated have crystallized into federal laws. The following are some of them: Child labor law, inheritance tax, federal reserve law, rural credits act, workingmen's compensation, federal aid for state roads, physical valuation of all railroad property as basis for fixing freight and passenger rates, graduated income tax, direct election of United States Senators, and the extension of the parcel post system. While these laws have been put into effect, some of them are not entirely what is wanted and the Grange should use its influence for its improvement. With the record of the past two years we can expect to see national prohibition and equal suffrage as federal laws in a short time. The farmers are to be congratulated for their endeavors along co-operative lines, and the Grange should do everything possible to assist them in these endeavors. It should especially give aid to the beet growers who are organizing to obtain a better price for their product. It is nothing but fair that they should receive a price for sugar beets based on the value of the finished product. Taking the average price of sugar and that of beets, the factory gets \$24 for every \$6 it pays to the beet grower. The farmer has greater labor in producing beets than the factory in making sugar.

The Lecturer's Program.

Wednesday afternoon was given over to the lecturer's program. It was full of inspiration and entertainment such as the Worthy Lecturer, Dora Stockman, is able to get together. Musical numbers consisting of music by the Industrial School Band, solos by E. A. Dodd, Master of Capitol Grange, and music by the ladies quartette of Delta Grange. Readings were given by Mrs. Candice Bramble, of Windsor Grange, and Harry Coon, the youngest Grange master in Michigan. Mr. Coon is sixteen years old. Very able talks were given by Mr. Burr Lincoln on "Weights and Measures;" L. W. Oviatt on "The Future of the Farmer;" A. B. Cook on "The Grange in New Co-operative Projects," and W. F. Taylor on "Grange Possibilities."

Improving Grange Interest.

Mrs. Stockman also gave her lecturer's report. This report urged further use of the standard Grange plan, as past experience has shown that it has been an incentive to more faithful work in the Grange. The lecturer has received good co-operation from outside forces, especially from the Extension Department of M. A. C., and she urged greater use of this department in the future. The system of awarding medals to young people for taking part in Grange work which was suggested last year and tried out in four counties with success. Between two and three hundred Granges asked for the temperance play, and in many instances it was given several times. In order to interest children who are too young to contest for the medals, the Clover Club children were organized. To each child who memorized and gave four selections at different times, a button was offered. About 65 children in ten different counties had been awarded buttons. This plan has been very effective in increasing and reviving Grange interest in many places and the total cost to the State Grange was only \$15.

(To be continued.)

ANNUAL MEETING OF FRUIT GROWERS.

(Continued from page 610).

lack in good business essentials. A. J. Rogers, Jr., of Beulah, spoke on the solution of some difficulties in marketing. Mr. Rogers has a very high class trade in apples and his unusual methods of marketing were very interesting.

The program was closed by talks on "Injurious Insects, Old and New," by Prof. J. H. Pettit, and "Recent Developments in Spraying," by J. H. Carmody. The fruit growers were especially interested in the control of the aphids and psylla, which have been doing considerable damage in the orchards in the past two years.

Resolutions Presented by Committee on New Legislation.

Whereas, the good effects of the Jakway Fruit Packing Law (Act 207, P. A. 1913), are largely lost because no officer, commission, or department is charged with the duty of seeing that it is enforced, and,

Whereas, that which is everybody's business is nobody's business, be it,

Resolved, that it be the sense of the Michigan State Horticultural Society, in annual meeting in the city of Grand Rapids on this sixth day of December, 1916, that the coming legislature be asked to amend the law by the addition of a seventh section, the same to read as follows:

"Section 7. It shall be the duty of the State Dairy and Food Commissioner, his deputies and assistants, to enforce the provisions of this act."

For an Efficient Packing and Marketing Law.

Whereas, the Office of Markets and Rural Organization, United States Department of Agriculture, has been investigating the practices of grading, packing and marketing of fruits and other farm products in all parts of the United States, and,

Whereas, the Office has a subdivision with a project leader, which is devoting its entire time to this work, and,

Whereas, an effort is being made to secure legislation in the several states that will be fairly uniform, be it,

Resolved, that it be the sense of the Michigan State Horticultural Society in annual session at Grand Rapids on this sixth day of December, 1916, that the Federal Office of Markets, and the Michigan Director of Markets be asked to co-operate with the legislative committee of this society in an effort to secure from the 1917 Michigan legislature, legislation that will best serve the horticultural interests of this state, be it further,

Resolved, that it is the sense of this body that an effort should be made to obtain an Apple Standardization Act which shall be the equal of the New York State Apple law, be it further,

Resolved, that the present effort in behalf of the certification of Michigan fruits that reach an approved standard, be commended and encouraged and that this society favor such legislation as may be needed to make the certification plan more practical and effective, and be it further,

Resolved, that all organized agriculture in Michigan be asked to help bring about the desired ends.

On Advertising Michigan Fruit.

Whereas, the day is drawing near when the merits of Michigan fruits should be called to the attention of the consumers of the land, with the specific idea of increasing consumption, and,

Whereas, the importance of advertising our orchard products has been called to our attention in an able paper by Mr. Leon J. Baker, be it

Resolved, by the Michigan State Horticultural Society in annual session at Grand Rapids on this sixth day of December, 1916, that it be the sense of this meeting that a committee of three on advertising be appointed, and that this committee be directed to co-operate with the Michigan Director of Markets with the end in view of working out an advertising campaign that will be practical, effective, and that will finance itself.

BREEDERS' MEETINGS AT THE INTERNATIONAL.

(Continued from page 609).

elects as follows: President, Robert S. Blostock, Donerall, Ky.; vice-presidents and directors, Wm. F. Renk, Sun Prairie, Wis.; H. W. McLaughlin, Raphine, Va.; Dr. Sargent Snow, Syracuse, N. Y., and Frank Hoganbarth, Salt Lake City, Utah; secretary, Comfort A. Tyler, Detroit, Mich.

This association has had a big in-

crease in membership and has a large surplus in the treasury, although more money was expended last year than in any previous year.

American Shropshire Registry Association.

The annual meeting of this association was held at the Record Building with a good attendance of members. Officers were elected as follows: President, Arthur Broughton, Albany, Wis.; vice-president, Mr. Bishop, San Ramon, Cal.; directors, Prof. W. C. Coffey, University of Illinois; J. C. Andrew, West Point, Ind., and J. C. Duncan. The question of dog legislation in which this organization has interested itself was brought up but no definite recommendations were made.

American Shorthorn Breeders' Association.

At the annual meeting of this association all the old directors were continued in office except J. F. Prather, or Illinois, who refused re-election after many years of loyal service. J. L. Kilgour, of Illinois, was elected in his place. W. S. Pratt, of Vermont, succeeds Mr. Prather on the executive committee. The routine business of the association will be transacted by the board of directors at a meeting to be held January 10.

American Berkshire Association.

At the meeting of this organization W. S. Corsta, Whitehall, Ill., and C. H. Carter, Westchester, Pa., were elected new directors. At a directors' meeting held after the general meeting, the old officers were re-elected as follows: C. F. Curtiss, Ames, Ia., president; N. H. Gentry, Sedalia, Mo., vice-president; Frank Springer, Springfield, Ill., secretary.

INTERNATIONAL CATTLE SALES.

Herefords.

At the Hereford breed sale held during the International, the average price received for the offerings sold was \$1,457. The high price of the sale was \$15,100 paid for the bull Woodford Sixth, which is a record price for the beef breeds. The offering was of outstanding quality, many individuals going above \$2,000.

Shorthorns.

The Shorthorn sale was so largely attended that the jam interfered with the bidding. The average price was cut down by the fact that there was a large percentage of young stuff in the sale. The offerings averaged \$960, the top price of the sale being \$6,650, paid for Maxwalton Pride 2nd, 410278. Royal Silver 387283 brought \$4,000. A large proportion of the offerings went to southern buyers.

Angus.

Accommodations were inadequate for the International Angus sale. The grand average for the offering was \$681 for the 53 head sold. The top price was \$4,500 paid for the prize-winning bull Epistos. This is a record average for International Angus sales.

LIVE STOCK NEWS.

The hog markets of the country, with Chicago leading off, are in a condition that promises great things for the winter season, and cheap hogs look a long way off. It is true there has been quite a decline in prices since the highest time last summer, when prime barrows were selling around \$11.60 per 100 lbs., but prices are still extraordinarily high and tower away above former years. A year ago hogs were selling in the Chicago market for \$5.60@6.75 per 100 lbs., and ten years ago sales were made at a range of \$4.60@5.05. Within a short time the best heavy barrows such as eastern shippers are in the habit of buying in the Chicago stock yards have sold around \$10@10.20 per 100 lbs., with choice hogs carrying plenty of weight bringing a substantial premium because of their growing scarcity. Owing to the great advance in corn prices, stock feeders are losing as little time as possible in marketing their swine, and this accounts for the unusual predominance in the market of light weight hogs among the daily receipts. This course may be all right for stockmen who are out of feed, but it does not appear to be right for farmers who are well provided with corn, even if that cereal is selling unusually high. Within a short time the hogs reaching the Chicago market have averaged in weight only 195 lbs., which is the lightest seen since last January. The average weight for the previous week was 197 lbs., the average a month earlier standing at 211 lbs., two months earlier at 226 lbs., one year ago 186 lbs. and two years ago 220 lbs. Fresh and cured hog products have followed the same course as hogs, with an unprecedented foreign and domestic consumption and materially lowered stocks of provisions in western warehouses.

BUY THE BEST AND STILL SAVE \$25 TO \$50!

Direct From Factory to User

I mean every word of it! You can own the best spreader built and save from \$25 to \$50 over prices usually paid for spreaders not as good—not as down to date in design, as light in draft, made of as fine materials nor covered by the eleven Galloway spreader patents found exclusively on the Galloway. These features and many others make the Galloway

WORTH \$50 MORE THAN ANY OTHER SPREADER

Remember this spreader is low down—only 42 in. high to center of box. Easy to load. Lightest draft spreader of its capacity built. Two horses handle Galloway spreaders anywhere. The Galloway wide-spreading, V-rake, worth \$15 extra on any spreader—costs you nothing extra on the Galloway. The invincible, irremovable, patented roller-feed—an exclusive Galloway feature—the secret of its light draft, alone worth \$25 extra on any spreader—exclusive again on the Galloway—costs you nothing extra. Patented automatic stop, uniform clean out, push board—worth \$10 extra on any spreader—exclusive on the Galloway—costs you nothing extra. These are only a few of the special features you will find on the Galloway which are protected by Galloway patents. Don't buy a spreader of any make or kind until you have tried a genuine Galloway 1917 Model No. 8, No. 5, or No. 1A at our risk without obligating yourself in any way. Give my spreader

30 DAYS' ACTUAL FIELD TRIAL

and return to me within one year if not perfectly satisfactory. Remember we manufacture in our own factories and sell direct from factory to farm. Remember that no spreader is as good as the Galloway that does not have these modern improvements, and remember again that other spreaders can't have them because they are patented Galloway features and can be found on no other spreader.

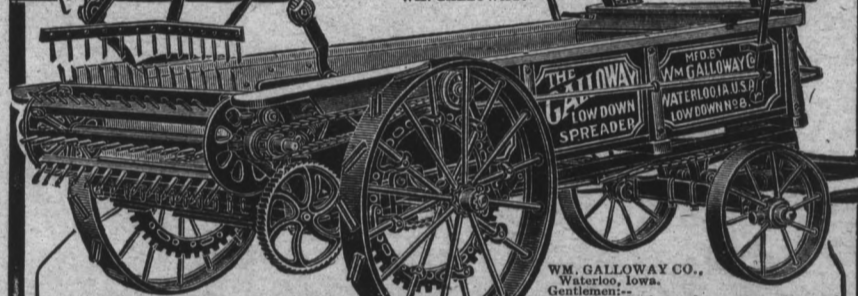
6 EASY SELLING PLANS

Pay for this spreader on your own terms. Buy it now, use it all winter and spring, pay for it next fall when it suits you. Complete particulars of these six easy selling plans in my new free book which tells all about Galloway spreaders, engines, separators, tractors and farm implements built in my own chain of factories right here in Waterloo.

GET THIS FREE BOOK

TELLS ALL ABOUT MANURE SPREADERS. Let This Book Save You Money. It tells you how to double your corn crop—increase your wheat crop, and by the judicious use of the manure crop on your farm grow three bushels of small grain where you grew two before. A postal gets it. 250 pages. Tells how to handle manure with least labor. How to increase your corn crop 15 bushels per acre. How a Galloway spreader will pay for itself in one year by increasing crop profits. How we save you \$25 to \$50 and still give you a better spreader. How and why a Galloway spreader handles easier with two horses than other spreaders with three and often four. How a run out, unproductive farm was turned into a gold mine crop producer. How to build a manure pit to preserve fertility, etc.

Only 42 in. High at Center of Box. All four wheels under the load. A compact, low down, modern spreader without an equal on the market today. WM. GALLOWAY.



WM. GALLOWAY CO., Waterloo, Iowa. Gentlemen:—I want to thank you for your courtesy and square dealing in my purchase of a manure No. 8 that you shipped me. It is giving me the best of satisfaction. I have been in active business more than 25 years and I wish to say I never received more kind or fairer treatment than I have from your house. Some people say, keep your money at home. I have a good spreader as money can buy, and by buying from you I kept \$35.43 in my own pocket which is the nearest home I can keep it. Some said that a 65 bushel machine was too large, but I am using mine with a team that weighs 1,800 lbs. with perfect satisfaction. Very truly yours, Mr. Wm. H. Adams, R. 1, Pound, Wis.

WM. GALLOWAY, PRES., WM. GALLOWAY CO., WATERLOO, IOWA. Manure Spreader Manufacturing Specialists. BOX 189. NOT DEALERS or JOBBERS.

Ditching and Terracing

Made Easy—\$35 to \$50 buys this wonderful



Will prevent crop failures. Cuts V-shaped ditch, cleans old ditches, remarkable dirt mover. Does work of 50 to 100 men. All-steel. Reversible—throws dirt either side. Adjustable for narrow or wide cut. 10 Days Free Trial. Write for FREE Book.

Owensboro Ditcher and Grader Co., Inc. Box 120 Owensboro, Ky.

Cuts 1200 Yards 2-Foot Ditch in One Day—Goes Down 4 Feet

KITSELMAN FENCE

Get It From the Factory Direct. HORSE-HIGH, BULL-STRONG, PIG-TIGHT. Made of Open Hearth wire, heavily galvanized—a strong, durable, long-lasting, rust-resisting fence. Sold direct to the Farmer at wire mill prices. Here's a few of our big values:

- 26-inch Hog Fence - 15 cts. a rod. 47-inch Farm Fence - 21 cts. a rod. 48-inch Poultry Fence - 27 cts. a rod. Special Prices on Galv. Barbed Wire.

Our big Catalog of fence values shows 100 styles and heights of Farm, Poultry and Lawn Fence at money-saving prices. Write for it to-day. It's free. KITSELMAN BROS. Box 278 Muncie, Ind.

PULL OUT THE STUMPS!

The HERCULES

All Steel Triple Power Stump Puller pulls an acre of stumps a day—increases the value of your land 100%. Makes room for money crops. Guaranteed for 3 years against breakage from any cause. Send name for fine free book, 30 days free trial offer and special low-price proposition. HERCULES MFG. CO. 937 25th Street, Centerville, Ia., U.S.A.

FREE

Wonderful Money Saving Fence Book Over 150 Styles. 13¢ Per Rod Up. Gates-Steel Posts-Barb Wire. DIRECT FROM FACTORY-FREIGHT PAID. All heavy DOUBLE GALVANIZED WIRES. 13¢ per rod up. Get free Book and Sample to test. THE BROWN FENCE & WIRE CO., Dept. 49, Cleveland, Ohio.

FARM WAGONS

High or low wheels—steel or wood—wide or narrow tires. Wagon parts of all kinds. Wheels to fit any running gear. Catalog illustrated in colors free. Electric Wheel Co., 3516 St. Quincy, Ill.

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