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Organization for Community Welfare.

THE two main factors in the making of farming a more attractive occupation, are the development of its business and social sides. The large amount of work done along these two lines indicates that the farmers and the rural educators are aware of their importance. In order that the farmer may get a more just share of the consumer's price for his products, there are developing in all sections of the country, co-operative organizations for selling farm produce. These and other co-operative farm organizations also buy farm equipment and other essentials of rural living at a greater reduction than they could otherwise be bought. While co-operation is almost a byword in the development of farming as a business, it is rarely thought of in developing the social side of the rural districts. We have our Granges, Farmers' Clubs and other farmers' social organizations, but a co-operative rural social organization is rare, therefore the Wixom Federated Committee is unique among rural organizations.

Wixom is a small town in Oakland county, situated at the junction of two railroads. It is a typical country town, having a couple dozen houses, two or three stores, small hotel and creamery. It also has its rural school and country church, and is fortunate in being surrounded by some very good farm land which is tilled by progressive farmers.

Wixom, in common with other country towns, also has a country preacher, but this preacher, Rev. Fay Cilley, is different. He is not of the Sunday religion dispensary kind who, besides fulfilling his Sunday duties, limits his services to attending weddings and burials and keeping in the good graces of the ladies and society. He is one who believes that religion is an everyday affair that can be applied and practiced as well as thought. Having practical Christianity foremost in mind, he sought for a means of applying it and the Wixom Federated Committee is the result.

This committee which consists of

one member each of the Baptist Church, of which Mr. Cilley is pastor, the Grange, Farmers' Club, the Sunday School, the Wixom school and the local branch of the county Y. M. C. A., which has just been organized, has been a factor in the social affairs of the Wixom community since about a year ago last June, when the process of organization was first undertaken. Its object is to get the various organizations which constitute its membership to concentrate their energies along common lines. When there are such a comparatively large number of organizations in a community, jealousies are apt to arise and there will be considerable useless repetition in

the financial outcome. The committee also has a course planned for this winter, the first number of which has already been given. Another accomplishment which would have been practically impossible under the old order of affairs was the obtaining of a new union depot. This is a matter upon which the committee has been working all summer and they were repaid for their efforts in seeing the ground broken for the new building late in October. The committee is also partly instrumental in bringing about the organization of the local Y. M. C. A. Another feature which will be an annual affair is the Fourth of July or Home-coming celebration. This

siveness of the committee. It also gave the participants due time to prepare for this event, which was a decided success.

The day for the fair was ideal and the attendance was very large. The exhibits of fruit and vegetables were shown on tables on the lawn beside the meeting hall, and were especially good. The poultry exhibit was also outdoors, and while not very large, consisted of some very fine specimens of Indian Games, Silver Campines, Plymouth Rocks, Wyandottes, and a Bantam rooster. The latter was in full dress, having on a white collar and tie, and a hat.

Inside there was a very fine exhibit of canned goods, baked goods and fancy work. In the fancy work exhibit a patchwork quilt made by two sisters aged eight-two and eight-six respectively, created considerable interest. The quilt was made without the aid of glasses, and was finished the night before the fair. There were also quilts made by two school children which were a credit to their endeavors. The hall also contained the exhibits for the school contest; these contained drawings, carefully prepared note books, examples of manual training work and domestic science. The drawings of farm animals were especially good, and the aprons exhibited were equal to the work of older people. One unique exhibit was a very careful work of darning a tear in a piece of cloth. These were good examples of the fact that the instruction in the rural schools is becoming more practical. In this school contest Wixom school won first prize, West Novi second, and New Hudson third.

The Baby Contest Interesting.

The contest which created the most interest was the better baby contest. There were over twenty babies entered, and it took two doctors and a nurse over six hours to judge them. The babies were put through all the tests common to such contests, being tested for mentality, eyesight and general health. They were also care-



The Horticultural Exhibit at the Wixom Fair.

the work of good that the various organizations are doing. In carrying on their social, religious and public work in the spirit of co-operation through this committee, much greater results are obtained than in opposition along these lines of work.

This committee was sufficiently organized last winter to carry on a very successful lecture course of five numbers. While these courses had been given in former years by the individual societies they were not nearly as successful in the talent furnished or

was a very successful event this year, and the games and program participated in created favorable comment, even from the doubters.

The Federation Fair.

Perhaps the most pretentious undertaking of this committee was the Wixom Federation Fair, which was held on October 31. The plans for this fair were made last winter and the printed premium lists were ready for distribution last April. Having the plans for this fair made so early in the season was an indication of the progres-



The Exhibit of Fruits and Vegetables.



The Dairy Cow Demonstration.

Read our proposition on page 519 this issue—Read it Today.

fully measured to compare their measurements with those of the standard. The sweepstakes medal was won by a boy, Richard Moore, who scored 96½. The first premium girl, Irene Oldenburg, also scored 96½, and was a very close competitor for the sweepstakes premium.

A unique event which was held in the afternoon was the demonstration contests. The first consisted of first aid and emergency methods, and the contestants showed the method of resuscitating the drowned and the manner of applying various kinds of bandages. The demonstrations of some household and farm operations consisted of stringing seed corn, splicing ropes and washing dishes. The young lady who gave the dish-washing demonstration, showing a labor-saving method of doing that work, won the first premium, and the boy who did the corn stringing won the second premium. In the emergency method demonstration, the young man who did the bandaging won the first premium. **Dairy Cow Demonstration Instructive.**

A very instructive feature of the day's events was a demonstration of the dairy cow, by Prof. H. E. Dennison, of the Agricultural College. He gave a very interesting talk on the conformation of a good dairy cow, using the cows on exhibit to illustrate his points. He showed up the good and bad qualities of these subjects in a very interesting and instructive manner. The favorable comments heard after the demonstration left no doubt as to its practical value.

Premiums were offered in all of the contests, and while the premiums were not large, they helped to encourage the spirit of contest. To pay for the premiums the committee served a dinner for which a small charge was made; they also derived some profit from the sale of lemonade, popcorn, and other refreshments during their Fourth of July celebration.

While this committee has been very successful it has not been without obstacles to contend with. Being something new, it has been looked upon with doubt by the ultra-conservative kind. These mainly consisted of some of the old church members who thought it improper for the church and the preacher to take part in anything of this sort. A plan for buying a piece of property between the schoolhouse and church for playground purposes was held in abeyance on account of the objections of this conservative faction. The objections of these people are, however, being overcome, and it is likely that this playground will be one of the accomplishments of the committee for next year.

Renewal of Interest Result of the Committee Work.

The effect of the work of this committee has been to renew the pride in the community, and create renewed interest in its social development. It has concentrated the efforts of the various organizations of Wixom so that they quickly show practical results. It has also shown that the people have faith in a preacher who believes in practical Christianity, for the attendance at church has greatly increased and the Sunday school is taxed to its capacity. It is another example of the fact that religion must be progressive as well as other human interests, in order that the church may still be popular.

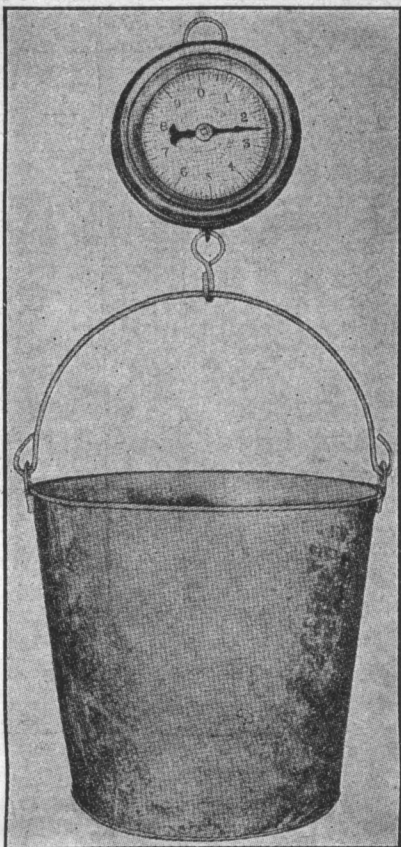
This is the fifth of the 52 special articles announced for publication in consecutive issues of the Michigan Farmer. Other articles on the same general topic will follow. The special article for the next issue will be "The Development of City Markets."

MEASURING RAINFALL.

Some time ago you published directions for making a rain gage. I enclose directions sent out by the Weather Bureau, for finding the amount of rainfall by weight, which is, I believe, superior to a gage, requiring a spatula or very thin rule to

dip into the gauge to measure the amount of rainfall. I use this weighing method to determine rainfall and find it very satisfactory. It is quite a satisfaction at least, to know exactly how much the rainfall is at any given time, or during any given period. The weather bureau directions follow:

An excellent equipment for collecting and measuring either rain or snow consists of a simple pail or bucket. The location selected for setting out the pail should be chosen at a point in some open lot or field unobstructed by large trees or buildings; nevertheless, low bushes, fences, or walls that break the force of the wind in the vicinity of the gage are beneficial if



not too near or too high. Low vegetal growth near the gage is also beneficial, but the top of the pail must be at least as high as the general growth. It is almost needless to say that the pail must be secured against being overturned by the wind, animals, or accidental causes. Such a collector of rainfall constitutes almost an ideal rain and snow gage, and it remains only to explain how to measure the collected precipitation properly. If now the diameter of the pail is just 10½ inches at the topmost edge, each ounce of water collected therein represents two-hundredths of an inch of rainfall, or, in figures, 0.02. Many 12-quart pails are exactly 10½ inches at the topmost edge. The depth of the rainfall as shown by the water caught in the 12-quart pail is, therefore, best ascertained by weighing the contents of the pail. Almost every farmer or other individual possesses a small balance by which the weight of the pail and its contents can be determined in ounces or half ounces, and such a determination of the weight is all that is necessary to ascertain the rainfall. However, it will be very convenient to provide a simple balance, such as is shown in the illustration, with a dial having half-ounce gradations only, numbered 0, 10, 20, 30, etc. From what has been said, such gradations will represent hundredths of inches of rainfall. A still further convenience is secured if the special balance provided for weighing the bucket is adjusted so that the index stands at 0 on the scale when the empty bucket is suspended on the balance. Consequently, a simple scale reading of the special balance when the pail containing the collected rainfall or snowfall is suspended thereon becomes the depth of water in hundredths of inches. If, however, only an ordinary balance weighing in ounces is available and after a rainfall the pail and its contained water is found to weigh say

three pounds eight ounces, and the empty pail alone weighs only one pound 14 ounces, the difference gives one pound 10 ounces net, or 26 ounces; 26 multiplied by .02 gives .52 inch of rain.

The measurement of the contents of the pail by weighing avoids all difficulties as to whether the precipitation is in the form of rain or snow. The result is always the equivalent depth of rainfall. Moreover, a pail with sloping sides is just as good as, in fact it is better than, one with vertical or parallel sides. In each case, however, the diameter must be just 10½ inches at the top inside edge, so that each half ounce of collected material represents one-hundredth of an inch of precipitation. The record should be taken at about the same time each day—weather observers record one day's fall regularly at 5 p. m. In hot weather, when water evaporates quickly the record should be made as soon after the rain has stopped as is practicable.

Barry Co.

JOHN S. CHANDER.

KIND OF COMMERCIAL FERTILIZER TO USE.

I have a field of about six acres which has been in a rotation of corn, oats, wheat and timothy and clover for several years. Last year the seeding with the wheat failed and this year (1914) I planted to corn and potatoes, using some barnyard manure on it with good success. Where there was no manure the crop was very poor. Next year I will have enough manure to nearly cover it, but am very anxious to raise all I can on it and would like to know what commercial fertilizer I could use on it successfully. This field is all high, well drained, in fact, slopes from the center in all directions. It has a heavy clay subsoil and the surface runs from heavy caly to sandy loam on one side. I want to plant it next year to potatoes, corn and garden stuff, possibly a couple of acres of cucumbers.

Kent Co.

S. F. C.

From your description and history of your field, I am confident that a good general complete fertilizer would be more practical than any special brand. What this soil needs is some available plant food containing the three essential elements of fertility, nitrogen, phosphoric acid and potash. Of course, organic matter is needed and a dressing of stable manure would bring good results. Stable manure would improve the crop producing power of the soil by furnishing organic matter and also a small amount of the three essential elements of fertility. Clover sod, or any sod, plowed down, acts in the same way, but you do not get results as quickly because the nitrogen, phosphoric acid and potash in the clover sod is not as available as in the stable manure. Now, in the fertilizer, these three essential elements are even more available than in stable manure, but, of course, the fertilizer does not furnish the organic matter. There is where fertilizer falls down. So to get the best results, fertilizer should be used with stable manure and in connection with a rotation of crops which supply sods and other organic matter. From the history of your field, I judge that your land cannot be seriously deficient in vegetable matter. You have grown grass in a rotation of crops and this has furnished vegetable matter. Now your dressing with stable manure will furnish more vegetable matter but does not furnish sufficient available plant food to raise maximum crops and commercial fertilizer enables you to supply this. I recommend that you use a general complete fertilizer like 2:8:3 or 3:8:2 or 1:8:2 and from 300 to 500, and on potatoes even as high as 800 pounds per acre. COLON C. LILLIE.

WINTER CARE OF AUTOMOBILES.

Where the automobile is to be laid up over winter, as will be the case on most farms, some attention should be given it for best results. It should be thoroughly washed and polished with

some suitable preparation, so as to preserve the varnish. It should then be stored in some place away from stables where stock is housed, and covered with a canvas to exclude the dust. The tires should preferably be removed and stored in a dark place, preferably in the cellar, where the rubber will deteriorate less than in a warmer or colder atmosphere. During the winter season there will be time to carefully examine the casings and mend all small cuts with one of the gum preparations manufactured for that purpose. This is important, and will add greatly to the serviceable life of the tires, as it will exclude the moisture and preserve the fabric of the tire, which deteriorates rapidly when exposed to moisture. This treatment also excludes the sand which will work into small cuts, separating the rubber from the fabric, thus rapidly ruining the tire. The rims should be cleaned of rust and painted with aluminum or other metallic paint. The car should preferably be supported by small sawhorses made for the purpose.

COWPEAS IN WEST MICHIGAN.

The cowpea has always been looked upon as a southern plant. Many Michigan farmers have tried to raise them for seed and have failed. Yet the writer, who is located in Newaygo county, has had great success with cowpeas during the past season on what is known as jack pine land, which has always been looked on as worthless by heavy soil farmers. This particular tract of land has been in cultivation for more than 40 years. The crops grown were corn, rye, beans, millet and buckwheat. There never was any clover sown and very little manure used on this place, the rye seldom producing more than six bushels per acre and beans two and three bushels per acre.

The writer bought this place about a year ago, and decided to try and build the place up so as to produce paying crops. Early in the fall part of this place was plowed at the time there was a fine crop of weeds on the ground, such weeds as sand burrs, milkweed, ragweed and golden rod. The land that was plowed was sown to rye. In the spring when the rye was about 10 inches high it was plowed under. About the fourth of June one-third of an acre was sown to cowpeas. They were planted 28 inches apart in the rows, and were cultivated twice and hoed once. The growth was something wonderful. Side branches of the stalks were as much as five feet long. During the hottest and driest spell of the summer they made their best growth and had their best color. From this one-third of an acre of land 11 bushels of fine matured seed was harvested. This experiment attracted considerable attention among the farmers in this vicinity.

When the crop was harvested the cowpeas were pulled by hand. Upon the roots nodules were found that were the size of marbles, which clearly demonstrates the nitrogen gathering propensity of the plant. Upon this land rye was sown again, and one can see where the cowpeas were, by the fine growth, as compared to where beans were grown.

The growing of cowpeas should be encouraged among all farmers on sand land. The crop can be used in many ways. The grain, when ground, is a fine cow feed, while chickens seem to relish the bean. The plant can be cut and cured for hay, and has a great feed value. As a green manure crop cowpeas cannot be excelled, not even by clover. This may be a broad statement, yet anyone trying same will be convinced, when farmers raise their own cowpea seed, and plant them and plow under, they will find out that it is a cheap fertilizer and also one of the best obtainable.

Newaygo Co. LOUIS BIEMER.

The Farm Labor Problem.

By A HIRED MAN.

MY reason for putting into writing my ideas in regard to why help is hard to get and keep on some farms, and suggesting some remedies is, that possibly an expression of a hired man's viewpoint might bring about a better understanding between farm employer and farm laborer.

One reason that employed men in the cities do not more generally strike out into the country to look for work during the farmer's busy months, is that the general run of city laborers do not know that there is such work to be had. At least, they know so little of farm conditions that farm work is the last thing they think of. This was my case. In the same way the average farmer has little idea of the way in which shops are run in the cities.

It is to be much regretted, however, that many city laborers who do know or think that they know, something

read in bed and the lamp be a poor one. However, he is working for so much and board and has to take it. In the summer evenings the hired man can sit under a tree and smoke, after his evening work is done, and in the winter he can crowd into a warm corner, if he can find one, and read if he wants to and the light be strong enough, or go to bed.

I want to say something in particular in regard to the board part of the hired man's pay. If a man applies to a farmer for work, the farmer has a perfect right to ask such questions as, "Can you milk?" "Can you plow?" "Do you drink or smoke?" and "Where did you work last?" Now, after the employer has told the man how much with board he will pay for such services the man says he can render and that he will give him a trial, hasn't the man the same right to turn around and ask such questions as, "How often do you have beef?" "Are there

they do not have much time to spend with their families. Instead of paying this class of help so much a month with house, so much milk a day, potatoes, a hog, firewood, apples and anything else that is for sale, why not pay what the man is worth, with a proper deduction for the use of the house, and let him eat, burn, and buy what and where he pleases? He would feel more independent and so would his wife.

The Solution of the Problem.

The only solution that I can see is to try to make it as pleasant and agreeable as possible for the hired help and pay for services rendered. If the farm will not support a hired man at a reasonable figure, then either the farm does not need a hired man or the management is not the best.

Of course, the hired man gets more pay than he used to and does not have to wait until November to get it, but so do all classes of workers get better pay than they used to get. All standards of living are higher, or at least different.

The farms where the help is begrudged the best that the family has are few, and I have not intended my illustrations to be personal or to show ill feeling on my part as a hired man toward the farmer as an employer, but as stated above, simply as a means of expressing my ideas of some reasons why help is hard to get and keep, on some farms, in the hope that such an expression may help toward a mutual understanding between, and benefit to, both the farm employer and farm laborer. I like the country and hope to be an employer of farm labor myself some day.

SUCCESS WITH SWEET CLOVER IN NEWAYGO COUNTY.

Following in the trail of the popular legume, alfalfa, and proving itself as adaptable and as useful, comes the one-time weed, sweet clover, *Melilotus* alba, and sometimes known as Bokara clover and *Melilotus*. This member of the large legume family is proving itself as popular and useful in Newaygo county as many of its cousins. Several localities in this county are trying out the plant and having success in growing it. One of the most successful attempts at growing this plant was on the farm of Daniel Rousch. Mr. Rousch had an acre of land lying adjacent to his barnyard that had always been a rather unproductive

piece of soil, no plants doing well up on it. At the suggestion of County Farm Agent H. B. Blandford, Mr. Rousch decided to try some sweet clover. The piece of land was top-dressed lightly with barnyard manure and thoroughly fitted for seeding. Twenty pounds of seed, thoroughly inoculated with a pure culture, was sown on the fifteenth day of last April. The plants came up at once and thrived finely and on the fifteenth of July, three months from the day the piece was sown, 4,025 pounds of good hay were cut from the piece and people passing the field, and the travel is heavy there as one of Newaygo's blue-stone roads goes by Mr. Rousch's, knew that sweet clover was being cut, for the odor literally filled the air. A week from the time the hay was cut the new plants had started a good growth and there were turned upon the piece four hogs and eight small pigs. These animals were not able to keep the sweet clover down, so seven head of cattle were turned on and fed there for 14 days. The pigs have been on ever since, getting a good living until cold weather drove them in. The sweet clover thrived well all through September, which was very dry, and when the hogs were taken off went into the winter in good shape, giving assurance of good feed for next year. Mr. Rousch has planted two more acres. The Dull Brothers, large farmers northeast of Fremont, have also planted a like amount.

Newaygo Co. K. K. VINING.

A PROTEST AGAINST THE HUNTING NUISANCE.

Why should the state or any county issue licenses to hunters to hunt on private property? It is about time that our Legislature was enacting laws for the safety of human lives, and for the protection of farm property in this state. At this time of the year you cannot pick up a paper without reading of someone who has been accidentally killed while hunting. While that is not the only menace connected with the reckless way of hunting, it ought to be enough to set the people thinking that better laws for the control of hunters should be enacted.

The hunters that roam in the state are doing more damage than anyone is actually aware of. It is getting so bad that the farmer is not safe to go into the stock business, for if one has a wild woodland pasture for his stock it is not safe to run them there, nor is he safe in going there himself to look after them when he hears shooting and dogs barking there. Besides, the hunters go equipped with wire pincers to cut woven wire fences, to admit themselves and their dogs. If the owner of the property chances to run across them, and makes objections they only laugh at him.

We have a farm and keep considerable stock, such as cattle, sheep and horses, colts, etc., and from time to time have had some of it shot or damaged by dogs, till it was practically worthless. It does seem as though



Two Tons of Sweet Clover Hay per Acre Three Months After Seeding.

about farm condition look upon farm labor as a last resort. Their idea is that they have to work about 15 hours for little pay and that the board is very slim. The worst labor conditions that exist on farms, rather than the best, are the ones that become known, but we must admit that where there is much smoke there must be some fire.

If a job on a farm were as good as one in town, then the farmer could get help when he wants it, and particularly young men raised in the country would not drift to the cities, but would make farming their life work.

City vs. Farm Work.

A man working in a shop works a certain number of hours a day, generally from eight to ten, at a certain rate per hour, and gets paid a little above his regular rate for overtime work. He works under one boss. If unmarried he boards where he pleases, within his means. If his room and his meals do not suit him he can say so and get out. True, his expenses are greater but he has the fun of handling more money, and can get out evenings and Sundays.

Besides doing a day's work on a farm, the hired man is supposed to work for an hour before breakfast, usually has something to do at noon, and has some more to do after supper and on Sundays. The hired man sometimes has two or more bosses. Except when the master of the farm is away, his wife should not boss the hired man. If one boss can handle a hundred or more men in a shop, one should be enough to handle the hired man.

Living Conditions for the Hired Man.

The board on a farm might be excellent, but it might not agree at all with the particular hired man who happens to work there. His room may be close in summer and cold in winter. He may like a hard bed and have to sleep in a soft one. He may like to

two windows to my room, or is there any heat in it?" "Is the bed hard?" "Do I get a good lamp?"

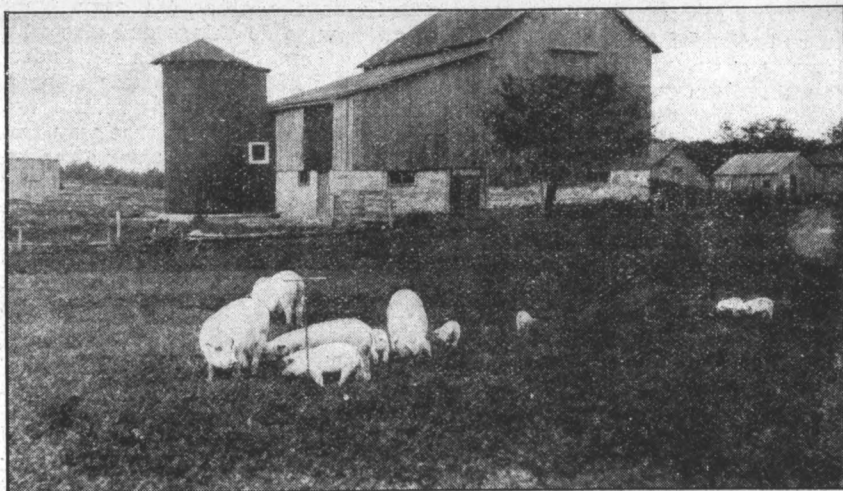
Comparative Compensation.

Just what does a hired man get compared with the compensation of a workman of comparative skill in the city? Compare a green hired man, who cannot milk very well, with an unskilled city laborer. If the hired man gets \$20 a month and board, supposed to be worth \$6.00 per week, then for a full year he gets the equivalent of \$552. Reduced again into weekly pay gives him \$10.61 a week for working from 12 to 15 hours a day for six days, and two or three on Sunday. City laborers can get from \$1.75 to \$2.00 a day, or \$10.50 to \$12 per week for working 10 hours a day for six days. They board where they choose. I think that the above figures cover the average pay for city labor. Then does the average hired man get the same board that would be set up to a boarder at \$6.00 a week? A less valuation of the board brings down his total pay for the week, or if the board is worth more than \$6.00 to the man, then his week's pay is higher accordingly. Of course, a more experienced hired man gets more money per month and a more skilled mechanic gets more per hour.

The Permanence of Employment.

Another condition is that only a few farmers employ help the full year. During the slack months the man must look elsewhere for work. If his home is in the neighborhood he can pick up some day work now and then.

It is a good idea, where possible, to make provision for married help, as then the man has a family and some property under his wing and is more inclined to stay in one place. However, married men shift around more than they would if they found conditions more pleasant. By the time they run back and forth to do the morning, noon and evening chores, sometimes



Pigs Pasturing on Sweet Clover on the Farm of Daniel Rousch, Newaygo Co.

piece of soil, no plants doing well up on it. At the suggestion of County Farm Agent H. B. Blandford, Mr. Rousch decided to try some sweet clover. The piece of land was top-dressed lightly with barnyard manure and thoroughly fitted for seeding. Twenty pounds of seed, thoroughly inoculated with a pure culture, was sown on the fifteenth day of last April. The plants came up at once and thrived finely and on the fifteenth of July, three months from the day the piece was sown, 4,025 pounds of good hay were cut from the piece and people passing the field, and the travel is heavy there as one of Newaygo's blue-stone roads goes by Mr. Rousch's, knew that sweet clover was being cut, for the odor literally filled the air. A week from the time the hay was cut the new plants had started a good growth and there were turned upon the piece four hogs and eight small pigs. These animals were not able to keep the sweet clover down, so seven head of cattle were turned on and fed there for 14 days. The pigs have been on ever since, getting a good living until cold weather drove them in. The sweet clover thrived well all through September, which was very dry, and when the hogs were taken off went into the winter in good shape, giving assurance of good feed for next year. Mr. Rousch has planted two more acres. The Dull Brothers, large farmers northeast of Fremont, have also planted a like amount.

Gratiot Co. CHAS. KERR.

Education vs. Experience for Farm Boys.

MANY articles are being published in the papers and magazines knocking the college trained farmer and in most cases these articles are written by men who are either prejudiced or misinformed. The educated farmer has come to stay, and the sooner the doubters appreciate that he is most necessary to the growth and uplift of agricultural pursuits, the sooner farmers in general will derive the maximum benefit from him.

Of course, I do not mean to say that all educated farmers are college men; far from it, because many of our most educated farmers never attended college a minute. But just because some of our most successful and prominent farmers are college men is no cause for the antagonistic feeling which so many show. It seems like a plain case of "sour grapes" on the part of some.

Many fathers are debating the advisability of sending their boys to the agricultural college and the chief reason for there being any question in their minds as to the wisdom of this course is the attitude of the misinformed toward the college-trained farmer. Of course, a college cannot make a wise man out of a fool and we will have to admit that an "educated fool," as some are called, is perhaps worse than a common one. But the average man, made of the right kind of stuff, and brought up in the right way, is benefited by a college course and the fact that he is benefited makes him a benefit to the community in which he lives.

The Factors of Success.

The reason why some of our fathers were successful in accumulating a competence lies in the fact that they acquired land which did not cost them much. Land was cheap and labor was cheap and the prices were good. But land has raised in value, labor has more than doubled in price, and taxes have begun to cut into the profits so that now a farmer has to raise more to the acre or cut down the cost of production in order to come out even. Intensive farming has taken the place of extensive farming. Close settlement has brought in many pests and plagues which infest our stock and destroy our crops. The farmer must know how to combat these enemies of the farm and he must know immediately. The symptoms and history of these pests and diseases must be studied in order that they will be recognized and attended to at once. In the colleges there are men who have spent their whole lives studying these same questions so that they are able to give expert advice on these subjects.

Now, land will raise good crops for several years, no matter what system of farming is carried out. But when all is taken off the farm and nothing put back the farm soon "runs out," as people express it. The study of soil fertility and crop rotation and the practice of these important principles are necessary to keep the farm in the best condition, the study of fertilizers and their effects on the different kinds of soil, the right amount to apply and the right kind to use, cannot but aid the young farmer in making the best use of his opportunities.

In our congested cities the most rigid sanitary principles must be applied, and this application reaches out to the farmer, particularly the dairyman, who must understand sanitation and know its value in order that he may produce a sanitary product. He should study the bacteriological principles of sanitation so that he can realize its great importance. How many epidemics and disastrous diseases are caused by some ignorant or careless dairyman.

All these and many more valuable things are taught by the agricultural college. They teach the reasons for them and the results obtained by the different methods. They give you the

experience of the best men of all ages in all lines of the work. It has taken many years of study and experimenting to establish some of these principles and a working knowledge of them is of great importance to every farmer.

The Broadening Process.

These are a few examples of what the practical agricultural colleges teach their students. Not only does the college course afford a broad practical education, but it branches out from the practical side enough to teach the nature and intellect by including subjects that may not be essentially practical, but a study of which will train the mind so that it can grasp situations more quickly than can the untrained mind. No man can be educated so highly that he will be prepared to meet all the emergencies that will arise in his life, but he can be trained so that he will go at the solution of his special problems in a systematic manner and in this way work them out better than he would without the training. New problems arise every day so that it takes common sense, judgment and decision to meet them in the most efficient manner.

Practical Experience is Necessary.

Of course, some say that the college does not give enough practical experience and this, in a large measure, is true. The classes are too large and the time and the number of teachers and instructors are too limited to give as much practical experience as a person really needs. Thus it is that the student must get his experience somewhere else. The college gives the theories, the training and the underlying principles which govern farming, but the experience must be gotten either at home or by working on a farm. A man who knows nothing about a farm cannot take an agricultural course and come out a practical farmer unless he has put in some time on a farm in the meantime. Many have been foolish enough to try that very thing and in the great majority of cases they have found out their mistake.

The time has come when the farmer should have both sides of farming, namely, the practical experience obtained on a practical farm, and by real work, and the theoretical principles, obtained only by study, in order that he may make the best use of his time and investment. Both are essential for the best results and one is as necessary as the other. A man must know how to do things and also why he does them. If he does not understand why he does a certain thing a certain way, he will not realize the significance of doing it that way and so if there is any extra work attached to that particular way of doing a thing he is liable to either slight it or do it another way. You can tell a person the proper way to do a thing but he must clearly understand the reason before he is thoroughly convinced that you are right.

The agricultural colleges and the experiment stations are a great asset to the farmers of the country. They test out all the new theories and prove their usefulness before they recommend them to the farmers. A farmer cannot afford to expend much time and money to experiment for himself but he does not have to, for the college and station does that for him, making the results freely available to all who are interested. They also turn out experts along all lines of agriculture who go back to the farms and use their influence and knowledge for the betterment of the community.

"Boys will be Boys."

Many criticize the things which college students do, but boys must have just so much fun and the things that boys do in college are the things that your own boys are doing right at home, only you don't know it. It does a boy good to get away from home, where he is usually pampered to some

slight degree, where he has to stand on his own feet and is measured by his real worth, usually for the first time in his life. If he is the right kind he will be benefited by the experience. If he is not the right kind he will be shown his mistakes so forcibly that he will be likely to profit by the experience.

Genesee Co.

L. S. BRUMM.

LILLIE FARMSTEAD NOTES.

This sudden cold snap has nearly paralyzed business at the farm. It was so sudden and unexpected, and so severe, that one could hardly gather things together and take care of them. The storm was a regular blizzard part of the time, the fierce wind seemed to sap the very life out of animals. Our young stock and sheep were all in the back pastures. We were a little slow in getting them because I thought the storm and cold would only last for a day or so. Besides, we were trying to get our sugar beets all hauled to the cars without any charge for demurrage, and we did. If we stopped hauling even with one team to get the cattle, then the whole gang was thrown out of union. We got the beets hauled and the next morning went after the cattle and sheep. The wind was howling, the snow blowing, we men were all bundled up with overcoats on, and everything was so wild and strange the heifers became frightened and, do our best, we could not coax or drive them from the pasture field. Simply had to give them up for that day. The following day the men took a team and sleigh with them. The heifers were not afraid of the horses and they had little difficulty in getting them. They had had nothing to eat and they were becoming more reconciled to abnormal conditions, anyway. I was glad to get them all in out of the storm. The incident reminded me of conditions in the northwest that I have read about sometimes. Just such conditions I never saw before, and hope to never see again.

But we are lucky, and have many things to be thankful for after all. All the crops were harvested and properly cared for before this storm, even to sugar beets, and many years we have not had our beets taken care of so early as this. The tops are out under the snow, but the snow has protected them so that they are frozen but little and we are feeding them directly from the field. This morning, November 23, it looks as if the storm is over, nature again smiles serenely and we are planning to draw the tops and put them in the silo. There is a fine lot of them and they are in good condition. If corn silage is worth \$3.50 per ton then I believe these beet tops are worth \$10 per acre for cow feed.

We were plowing when the cars came for the sugar beets only a half-day before the blizzard, and our plows are out, frozen in the furrow. Even the big gang engine plow is in the field. Undoubtedly we can not use this again this fall, but I am in hopes that the weather will change so we can do some more plowing with the horses.

With the exception of the plows the tools are all stored for the winter and with some minor repairs which will take but little time, the stock will be all comfortable in their winter quarters.

One job, however, is not yet completed, and that is threshing. We have considerable wheat yet to thresh. This job has been put off with the idea that we could do that when we could not harvest beets, potatoes, etc., and so we can. If the storm is over and the weather moderates we will try and do the balance of the threshing in a few days.

Looking back over the season and comparing it with other seasons, it makes a favorable showing. In fact, this has been the best season we have experienced for several years.

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Balancing Accounts with Dairy Cows.

By WILL FORBES, in charge of the Government Demonstration held at the National Dairy Show.

GOOD morning, John. This is certainly another fine day." "You bet it is. Say, Bill, where have you been the last three or four days?"

"Well, sir, I thought I needed a little vacation, so I took a couple of days off and went down to the Dairy Show at Chicago and I am here to tell you it is worth a week of any man's time. Why, John, I would not take a hundred dollars for all I saw and learned in those two days."

"Well, I reckon they did have a pretty smart show; but I have been so durned busy I just couldn't get away. I am going to try and get away next year if the crops are good."

"It will pay you to do it, John. I am going to go back next year and I am going to take the boys along."

"Well, I don't know, Bill. We folks are thinkin' about quitting the cow business and I don't believe there is much money in it, anyway. Then there is another thing that I don't take much stock in, either, and that is this hollering about us folks keeping and milking 'boarder' cows. Nope, I don't believe there is such a thing as these 'boarder' or 'robber' cows that we hear so much talk about these days. You know, I read a piece in one of the farm papers the other day that said there was one cow in every four that was not paying for her board and I don't believe it. Why, some of those fellows think that we farmers must be a set of fools to keep cows that do not pay for what they eat. Eh?"

"Well, I tell you, John, I used to think and talk like that; but last week, after looking at all the machinery exhibits, I wandered up on the second floor and there in one wing of the building was what they called the Government Demonstration Herd. It was just a common herd of nine cows, all grades; some looked good, some appeared to be extra good cows—about as good as any I have ever seen—and some looked rather common—

something like those two cows that you bought over at Jensen's sale last winter. They were having some speaking going on, so I just took a seat and listened to what was being said. The fellow was telling about the herd. He said that the cows were picked up and brought to Chicago to show the value of record-keeping. They weighed and tested the milk every day, kept account of the feed each cow ate, and so they knew whether the cow was paying for what she ate and also what it cost to make a pound of butter-fat. Butter-fat was figured at thirty-two cents a pound—just about what we were getting for it over at the creamery at that time. I asked him what they were feeding and what they figured the feed at. He said the ration was made up of three pounds of ground corn, one pound of ground oats and one pound of bran. The corn was figured at sixty cents a bushel, oats at forty-five cents, and bran at \$25 per ton; mixed hay at \$12 and alfalfa at \$18, so you see they used just farm grains and average farm prices. He pointed out one cow in the line that was making butter-fat at fourteen cents a pound and another that was charged eighty-one cents a pound, and I remember that one cow made a profit of twenty-one or twenty-three cents that day above feed, while the other cow lost eleven cents a day, and do you know, John, I believe there are farmers right here in our own neighborhood that are milking cows poorer than that cow that was losing eleven cents a day there at the government demonstration herd. Another cow in the herd returned \$2.35 that day for every dollar's worth of feed she ate—in other words, instead of hauling your hay to town for \$18 a ton that cow made it into butter and paid nearly \$45 a ton for it. Corn worth sixty cents a bushel, she paid \$1.40 a bushel for, and then you had the manure left to boot. Now, that was a new way of looking at it and I can't see why we

farmers can not make money at the dairy business and I believe we can if we put a little more brains and not so much muscle and late hours into it. I kind of thought that maybe he got those poor cows out of the stock yards, so I asked him about it. He said no; they were all bought direct from farmers and that they had all freshened within the last four weeks; that all had had three calves except one, and so you see no cow had the advantage over the rest. 'Calamity,' that was the name of the cow that was making the poorest returns. The day that I was up there she returned forty-one cents for each dollar's worth of feed she ate. Now, you see that owning a cow like that would never pay. She was a Shorthorn grade and freshened September 26. She gave, her best day, 8.4 pounds of milk, testing about three and one-half to four per cent. She was that cow that I told you lost eleven cents a day. There was another brindle cow, a Guernsey-Jersey cross that was about as poor. Then there was another cow that looked awfully good to me that they called 'Seldom.' She was a big, fine-looking Shorthorn and was milking about five gallons a day. I noticed that the cost of her feed ran pretty high, so she didn't make as much actual profit as some of the others. You know, after visiting the Dairy Show, I do not think so much of this 'dual purpose' idea as I did before. I believe if we are going to milk cows we will have to get a dairy breed or quit the business. As one fellow said, 'we can't hunt chickens with a bull dog.' One Holstein grade made as high as twenty-nine cents above cost of feed in one day. What struck me was the fact that a fellow milking that bunch of cows was making about a \$1.00 to a \$1.10 above the cost of feed each day, while, if he had sold four of them, two of which were kept at a loss and two at a very small profit, he would have been making about \$1.25 a day

and he would only have had about half the work, and that is what we will have to do, John—keep records on our cows and do away with the 'boarders.' I know I have got some and so have you. I am going to buy a pair of scales, which they say will cost about \$2.50, and then send to the Agricultural College or the government, and get some daily milk sheets and start to keeping a daily record of the amount of milk that each cow gives. I will have the milk tested once a month at our creamery and it will not be long until I will know just where I am at. I am going to quit this guessing and go to testing."

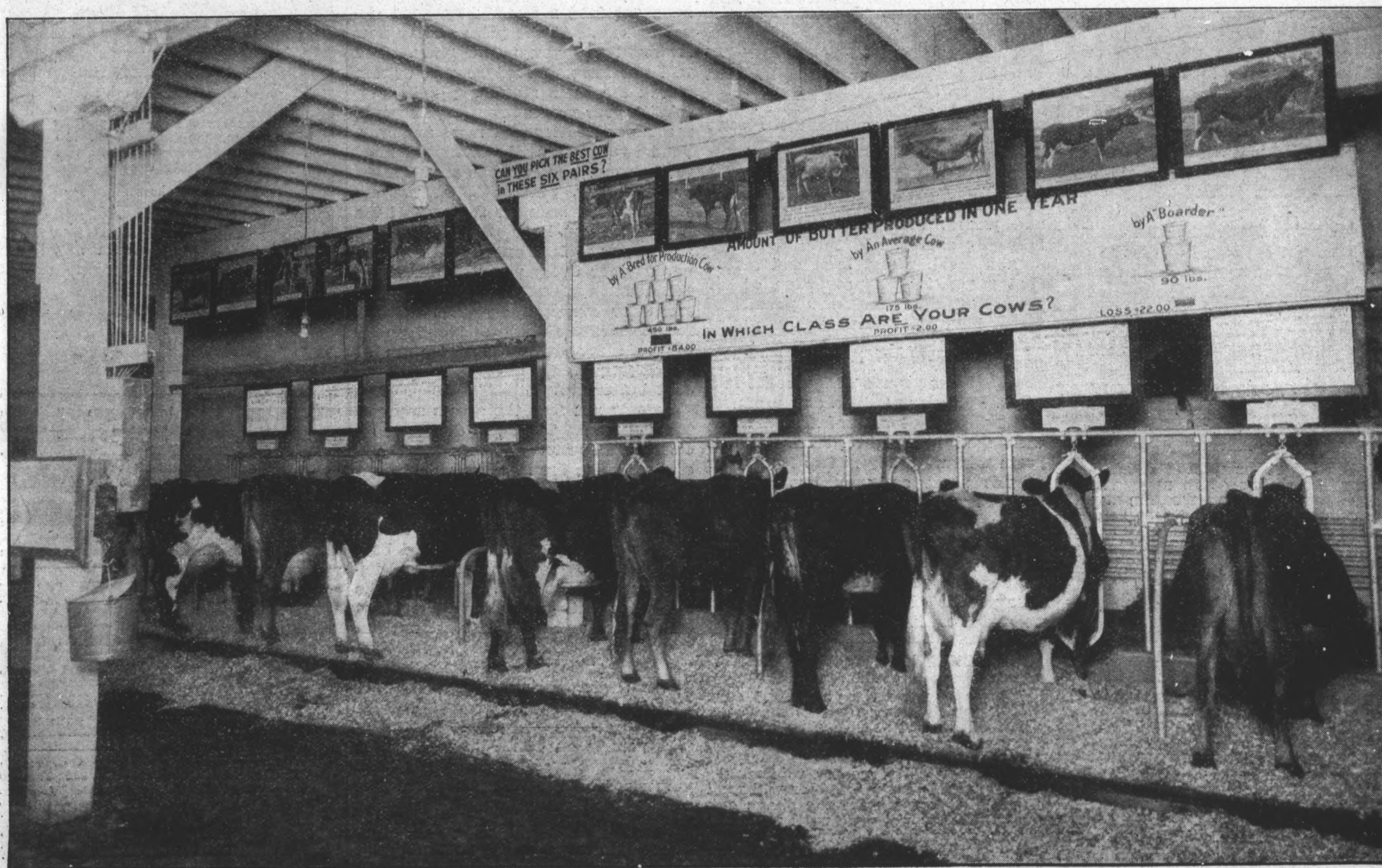
"Well, I reckon maybe you are right, Bill. I believe I will have to try to get down to the Dairy Show next year. Say, when you order those scales, get a set for me, too, and also a few extra daily milk sheets. Do you happen to know where I can get the figures on those cows that you were telling me about?"

"Yes; they said anyone wanting a complete report of the ten days' work of the herd could get it by writing the Dairy Division of the U. S. Department of Agriculture."

"Well, let us know when those scales and milk sheets come."

In your issue of November 14 we notice an article entitled, "Some Suggestions About the Model Cow Stall," by H. A. Branch.

Near the close of the article the following advice was given: "Use from two and a half to three measures of sand to one of cement." We feel that your readers' attention should be called to the fact that there is no reason for using a mixture richer than 1:2:3 in making concrete for floors. To use a mixture of 1:2½ or 1:3 is simply wasting money, on account of the workmen's ignorance of the principles underlying correct proportioning of concrete, which are designed to secure maximum strength.—K.



The Government Demonstration Herd at the National Dairy Show—Used to Illustrate the Variation in Profit or Loss from Average Dairy Cows.

APPLES FOR COWS.

I was interested in the reply to J. S. in a recent issue of the Michigan Farmer on the advisability of feeding potatoes and apples to milch cows. I have always fed apples to cows, and always with good results. They are certainly worth more to feed to cows than to make into cider. In chemical composition apples are equal to roots, one of the favorite cattle feeds in England. They have more dry matter than mangels, and over twice as much heating matter, but not so much protein, and only one-third as much nitrogenous matter. So far as chemistry goes, apples are worth as much for feed as roots, and nearly as much as corn silage.

Apple pomace has been put into silos to keep, and even fed to cows with beneficial results.

Prof. Sanborn says: "We find that 100 lbs. of apples gave 16.11 lbs. of digestible matter, being about twice as rich as the root crops, and yet a green food, and having the functions of green foods. Fodder corn gives but 12.85 lbs. Thus apples are richer than fodder corn, and are raised, as I believe, with less labor."

At the Canadian experiment station apples were thoroughly tried and found to be worth \$2.40 per ton when fed to cows; turnips and silage being worth \$2.00 per ton. The apples caused a gain of 23 lbs. of milk from each cow in 14 days.

Another authority says: Apples make good feed for cows if fed in small quantities at first, and gradually increased up to half a bushel at a feed, without injury."

I have proved the value of apples as food for cows by actual experiment. About four quarts were given to each cow for the first few feeds, until they became accustomed to them, and then the quantity was gradually increased to a heaping peck, fed twice a day. Previous to commencing the apple feeding, the cows had been receiving a four-quart ration of corn and rye meal, then selling at \$1.80 per 100 lbs. With one-half the meal taken away, and a peck of apples substituted in its place, there was no falling off in the quantity of milk produced, nor in the quantity of cream it contained, as measured by the Cooley cans. The ration of meal was worth 7½ cents. One-half saved by feeding a peck of apples, was 3¼ cents, making a bushel of apples worth 15 cents when fed to cows.

At the Vermont station, four years in feeding apple pomace to 20 cows proved: "That it was nearly equivalent in feeding value to corn silage," and "cows continuously, and heartily fed have not shrunk, but on the contrary have kept up their milk flow remarkably well. Fifteen pounds of pomace per cow have been fed daily with entire satisfaction."

Pennsylvania. J. W. INGHAM.

WHAT PROPORTION TO MIX BEET TOPS AND CORN FODDER IN SILO.

I have just completed a silo and would like to know how many tons of sugar beet tops you would put with the corn into a silo ten feet in diameter and 33 feet high? The corn stalks are getting pretty dry and I shall add water to them when filling the silo. I was told that you put sugar beet tops into your silo, but do not know how many or just how you did it.

Allegan Co. Dr. E. E. B.

As sugar beet tops contain a large amount of moisture I do not think it will be necessary to add water to the corn stalks if they are properly mixed. We have filled in this way and had satisfactory results when we mixed a load of beet tops for every half load of corn stalks. Of course, this is rather indefinite because there is so much difference in loads. The beet tops were hauled in the same wagon boxes we used for hauling beets and they would hold 3,000 to 3,500 pounds of

beets. Two of such loads of tops mixed with an ordinary load of corn fodder gave sufficient moisture so that the corn fodder kept nicely in the silo. If beet tops are somewhat fresh and ensiled, alone, there is an excess of moisture.

SPLENDID FOODS FOR A RATION.

I wish someone who understands feeding milch cows would answer the following questions: I have cornstalks with nubbins on, clover hay, oat chop, and brewery grains. What will I need to balance my ration? Will cottonseed meal and linseed meal do, if so, how much will I feed and what rule will I go by?

Wayne Co.

W. S.

With two good protein foods, clover hay in the roughage, and dried brewers' grains in the concentrates, no other feed is necessary to balance a ration for dairy cows. All the ration lacks to make it first-class in every particular is some succulent food, as corn silage, beets or turnips, etc., even potatoes or apples, or apple pomace, will help out. You can get along without any succulent feed and get fair results.

The best rule for feeding roughage is to feed all the cows will eat every day without waste. Feed clover hay once a day and corn fodder once a day. I take it this is corn fodder and not cornstalks.

Oats are pretty high priced now, and possibly it will pay better to use some corn meal and bran in place of the oats or for part of the oats. If you feed oats, mix them two parts oats, one part dried brewers' grain. If you feed corn meal, bran and dried brewers' grain, mix them equal parts by weight. Feed a pound of grain for every three to four pounds of milk the cow gives, or feed a pound of grain per day for every pound of butter-fat produced in a week.

MOST ECONOMICAL GRAIN RATION.

Please advise as to most economical grain ration to feed with corn silage, and mixed hay, mostly clover, to dairy cows, using any of the following feeds at prices quoted: Oats, ground \$34 per ton; corn, ground \$33 per ton; coarse oats middlings \$18 per ton; bran \$23 per ton; buckwheat middlings, coarse, mostly hulls, \$10 per ton; buckwheat middlings \$35 per ton; oil meal \$34 per ton; cottonseed meal \$32 per ton; gluten meal \$33 per ton; unicorn feed \$35 per ton; pea meal \$35 per ton.

Wayne Co.

L. D. H.

Feed all the corn silage the cows will eat up clean twice daily, morning and evening. Also all the hay they will eat without waste. For a grain ration from the feeding stuffs named and priced, I would recommend the following ration:

Corn meal, wheat bran and gluten feed mixed in the proportion of 100 pounds of corn meal, 200 pounds of wheat bran and 100 pounds of gluten feed. Then feed each cow as many pounds daily of the mixed grain as she produces pounds of butter-fat in a week. For example, if a cow produces eight pounds of butter-fat in a week, then feed her eight pounds of this grain mixture a day in two feeds, four pounds night and morning. If you are selling milk and do not test for butter-fat, then feed one pound of the grain mixture for every three pounds of milk the cow gives, if a heavy milk-er, and one pound of grain for every four pounds of milk if the cow gives very rich milk.

ENSILOING DRY CORN FODDER.

I have about seven acres of corn fodder which I intended to use as a dry feed as I am some short of hay. I have some straw and clover chaff, possibly three loads of the chaff. I have plenty of silage for this winter but I am told that the fodder will spoil or mold, to cut it with the silage cutter unless I would wait until real cold freezing weather. I have no place to put it except my empty silo. I was also told by one man that he would let a stream of water run in, the size of a lead pencil and it would make

good silage. Would the clover chaff be plenty for the dry feed with the oat straw, and use the corn fodder put in the silo, as suggested, as silage be all right? Then I could save the corn silage for the cows when pasture is short next summer.—J. H. B.

If you ensilo dry corn fodder you must wet thoroughly while filling or it will all spoil. A stream of water as large as a lead pencil is not sufficient for dry stalks. You need as much water as will flow through a half-inch pipe or hose. When the corn is only a little dry the small stream is needed. It will pay you to put your stalks in the silo. It is the only way to get anywhere near the full feeding value. If fed dry, nearly one-half of them will be wasted.

You can get along with clover chaff and oat straw for roughage if you feed liberally of grain. But, even then you haven't good rations. There should be one good feed of hay each day for best results. At the present price of hay I think it will pay you to buy some clover hay, because it will not be necessary to feed so much grain. However, with a liberal ration of grain you can get along fairly well without hay.

GRAIN RATION TO FEED WITH CORN SILAGE AND BEAN STRAW.

Will you please suggest a grain ration to feed to the cows, and also some last spring calves, for this winter? Am lost as to knowing how to feed this winter on account of not having any oats. The army worm almost cleaned us up on oats and barley. I have been feeding the cows since corn matured enough to feed, but with unsatisfactory results. For roughage I have at present corn fodder which was left over from silo filling, and when that is gone I will use silage. I also feed corn fodder and oat straw night and morning, and bean straw for noon. For grain I usually feed ground oats and cottonseed meal. But as I have no oats I must substitute something else. Have cottonseed meal at \$31.50 per ton and can get gluten feed at \$30, and wheat bran at \$30. Corn meal is not quoted at present. Will you advise me as to quantities and kinds of feed for cows and calves to get results?

Huron Co.

H. S. T.

Bean straw alone for dry roughage does not furnish variety enough for cows to do their best. You should have one feed a day of hay, good clover is best. At the price of hay now it would pay you to buy hay. You will not have to feed so much grain to get the same results.

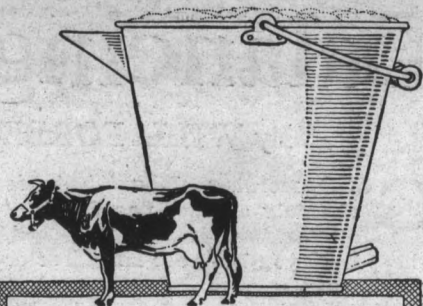
With your present roughage I would recommend cottonseed meal and bran. Feed two pounds of cottonseed meal to each cow per day, one pound night and morning, putting it on the ensilage. Feed bran for the rest of the ration. If you have good dairy cows it will pay to feed one pound of grain per day for every pound of butter-fat produced in a week, or one pound of grain for every four pounds of milk for low testing cows, and one pound of grain for every three pounds of milk for cows that test 4.5 to 5 per cent butter-fat.

I would not feed the calves any cottonseed meal. They will do better on clear bran or bran and corn meal mixed, two parts bran and one part corn meal. They ought to have enough grain to keep them growing nicely.

Keep and use only a pure-bred bull. Upon this depends the upkeep and improvement of the herd. There is little difference in the cost of raising calves of superior and inferior breeding, but there is a great difference in the profits obtainable from superior and inferior cattle. If necessary, go into debt for a good bull.

For warts on cattle or goats cut a slit into the wart and fill slit with pulverized blue vitriol. This is a safe and efficient remedy.

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Foot-and-Mouth Disease.

IN the last issue, through the courtesy of Dr. Giltner, of the Bacteriological Department of the Michigan Agricultural College, we were able to publish a group of pictures showing the manner of disposing of live stock found to be infected with foot-and-mouth disease. In this issue through a similar courtesy on the part of the Bureau of Animal Industry of the U. S. Department of Agriculture, we are publishing herewith cuts showing the characteristic symptoms of foot-and-mouth disease, as well as they can be shown by illustrations. Another cut in this group illustrates the care with which the infected animals are handled by official inspectors, in order to prevent the spread of the disease through this medium. While it is now hoped that the state is entirely free of foot-and-mouth disease, yet the danger will not have passed until a sufficient period of time has elapsed so that there is no possibility that any disease germs which may not have been destroyed in the campaign of eradication will have lost their power to communicate the disease to uninfected animals which by any means come in contact with them. It is for this reason that these photographs are published at this time, together with a brief description of the characteristic symptoms of the disease which may enable the layman to identify it should any suspicious cases come to his attention.

Aside from the slobbering which is illustrated in the accompanying cut, the most marked symptom of the disease which will be first observed by the layman, will be lameness, due to the infection of the foot at the point shown in the accompanying illustration. At the point indicated, including the whole area between the cleft in the hoof and sometimes extending along the coronet on the outside of the hoof for a short distance, a vesicle appears resembling an ordinary water blister in character. In a short time this breaks, leaving a raw sore. At the same time similar vesicles appear on the tongue and the mucous membrane of the mouth, sometimes extending to the muzzle, which when broken leave a raw red appearing sore, the surface of which is depressed below the surrounding tissue in a rather clean-cut manner.

In the event that any of these symptoms should make their appearance in any of the animals upon any Michigan farm, the state veterinarian or the

state live stock sanitary commission should be notified at once, in order that a correct diagnosis of the difficulty may be made and steps taken to prevent the spread of the disease, should it prove to be foot-and-mouth disease. It is probable that no cases will occur in the state, but in the event that cases should occur, prompt action of this kind would enable the



Inspectors Wear Rubber Suits and Gloves in Examination of Animals to Determine the Presence of Foot-and-Mouth Disease.

authorities to localize them and prevent the general spread of the disease from the new point of infection. No attempt should be made by the layman to diagnose the disease for himself, owing to the difficulty of dis-

tinguishing it from other less infectious troubles with somewhat similar symptoms, and the grave danger of infection by careless handling. The description given should enable the layman to determine whether or not the ailing animal can properly be suspected of harboring this disease. In case there is any suspicion that the disease is present, through the manifestation of any of the symptoms described no attempt at a close examination should be made until the state

bare spots on the skin enlighten him. By that time the colt is usually so badly run down that his chances for reaching his yearling form in condition to be called a real well-grown colt have been dissipated. Still, if measures are at once taken to rid him of the vermin, and particular attention given to his care for a few weeks he may be gotten to growing again so that when he gets on grass in spring he will catch up with the colts which were not the victims of lice.

Rid the Colts of Lice.

If one has not too many colts it will pay to give them a good brushing once a day. Grooming stimulates the functions of the skin and prevents, to a certain extent, the breeding of vermin. If, however, lice get a foothold, and frequent examinations should be made to be sure that they are not present, about as sure and efficient a remedy as can be employed to get rid of them is to get a can of almost any kind of the coal-tar preparations which are used by poultrymen for fighting lice on their fowls. Take an old, heavy blanket and on the under side of it spray heavily with the coal-tar preparation. If possible get a blanket that will cover the colt from just back of his head to his tail. Put this blanket on the colt and with surcingle wrap it as closely as possible around the colt and let it remain two hours. It is even well to put another and lighter blanket over the heavy, sprayed blanket before putting on the surcingle, to confine the fumes of the spray as closely as possible. After the blankets are removed, take an ordinary cattle card and go over the coat thoroughly, then give a good brushing with a stiff brush. This treatment three times at intervals of about a week or ten days will rid the lousiest colt of vermin. It will not take a couple of men long to spray, blanket and then brush a band of colts and it will surely pay.

Internal Parasites.

The other bugbear of colthood is intestinal worms, and they are more likely to be present in injurious num-

Winter Care of the Colts.

THE late fall and early winter is a critical time for the weanling and yearling colts. If, through ignorance or carelessness the colts receive insufficient or improper rations and reach the middle of the winter thin, weakened and stunted, the chances are greatly against their ever becoming the horses they would have made with proper care, and the farmer will lose the difference between what such horses are worth and what they would have been worth under the conditions with which every well-bred colt ought to be surrounded.

Almost everyone knows that the weanlings ought to be separated from

their dams at or about five months of age and it is also pretty generally recognized that long before they are to be weaned they should have been taught to eat grain and given a chance to partake of a liberal grain ration daily. Under such conditions the colts' growth is not stopped when they are taken from their dams. In fact, if fed a proper grain ration, together with roughage, preferably consisting of clean, bright clover hay, they will often grow more rapidly after weaning than before.

The Ration.

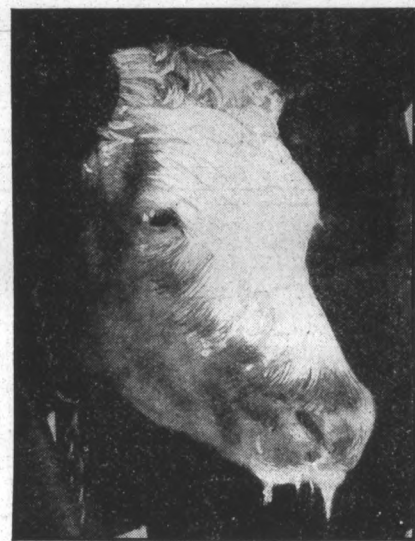
Oats and bran make an ideal ration for both weanling and yearling colts, but in case oats are regarded as too expensive, and especially where one has plenty of corn and rye, a good grain ration is made by grinding those two grains together, two bushels of corn to one of rye, and feeding on chopped hay, moistening all just enough to cause the meal to adhere to the hay. With this feed a well-steamed bran mash should be given once a week.

Exercise.

It is not alone the feeding of the colts that close attention must be paid. They must have plenty of exercise, but some attention must be paid as to the conditions surrounding them when turned out for this purpose. Icy yards are responsible for many injuries which reduce the selling value of the colts. Frozen grass kills many colts each winter; therefore, the owner should have his exercising paddocks where ponds of water are not likely to form, and should know whether or not the colts are gorging themselves with frozen grass. To guard against the last mentioned condition have racks or troughs in which some kind of roughage, hay, straw, sorghum or corn stover is available at all times.

Vermin.

Lice frequently counteract all the good effects of proper feeding and oftentimes the owner remains in ignorance of their presence until the ugly



Slobbering is a Symptom of Foot-and-Mouth Disease.



Characteristic Sores at the Cleft of the Hoof in Foot-and-Mouth Disease.

bers when the colt is kept thin in flesh and out of condition as a result of lice or improper rations. When once the colt becomes badly infested with these worms the proper remedy is turpentine. For a weanling give a teaspoonful in a little milk or raw linseed oil once a day for three days. For a yearling make the dose about a tablespoonful. Be careful in giving the mixture of turpentine and milk or oil to give it slowly, a swallow at a time, so as not to strangle the colt. If given too rapidly it may pass into the lungs by way of the windpipe and set up mechanical pneumonia.

Give the Colts' Feet Needed Attention.

While paying special attention to keeping the colt growing and free from vermin, in other words, in a thriving condition, do not overlook the importance of keeping his feet level and at such an angle that the bones of the legs will not become malformed

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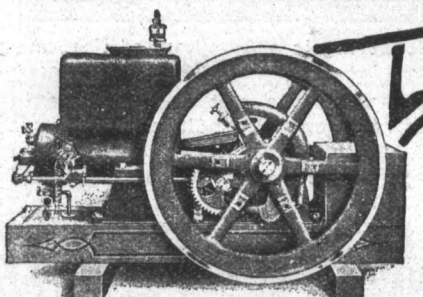
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to such an extent as to make him toe out, or toe in, either of which malformations will make a marked decrease in his market value for the buyers for the big industrial concerns in the cities which require heavy horses, are very particular regarding the legs and feet of the horses they buy. At the best the heavy work on paved streets operates against a long period of service by the soundest of horses and the purchase of those faulty in this respect means a quick renewal of team equipment. Look over the colts' feet at least once a month and with nippers and blacksmith's rasp take off the excessive growth and see that the feet are level. If a colt shows a tendency to toe out, there will be more rapid growth of the outside of the foot which be sure and take down a little lower than the inside, counting on the more rapid growth of the outside to level the foot before it comes time to attend to them again. If the colt toes in it will be the inside of the feet that will need similar treatment.

Every farmer knows that the colt should be fed well, but far too many overlook the importance of feeding right, as well as liberally, and of attending to the other details which have been mentioned here and which have an important bearing on the price he will bring when of marketable age.

New York.

H. L. ALLEN.

WINTER FEEDING OF THE FARM TEAMS.

Opinions may differ as to the value of this or that feed for farm teams, but it is evident that the actual food requirements of a horse performing a given amount of work cannot vary as a result of a change of opinion on the part of the feeder. The problem in horse feeding is to supply sufficient nutritive material for the production of the work required and at the same time to maintain the body weights. There is no surer test of the fitness of any given ration than that it enables the horse fed to maintain a constant weight. If the animal loses weight it is evident that the ration is insufficient either in quantity or quality, while if gains in weight are made and the animal becomes fat it is evident that more feed is given than is absolutely necessary.

Feeding farm teams during the winter season calls for more than ordinary care and skill if they are to be kept in the best condition possible, with the least expense for feed. The difficulty is increased by the fact that work on many farms is irregular or inadequate for the exercise needed to maintain health during the winter months. The cheaper horses can be carried through the winter the better, providing good health is maintained. If, however, when spring arrives they are weak and emaciated and require much extra feed and care to put them in condition for spring work, cheap feeding has been money lost rather than saved.

Horses' Teeth Require Attention.

An item for consideration is the condition of the teeth and especially in the older horses. It is quite possible to keep the animals in very fair condition during the spring, summer and fall seasons when they have more or less grass and a suitable grain ration, but with the arrival of the winter season and the feeding of such a ration as requires much mastication these horses soon lose condition and in the early spring they are so poor that they cannot do as much steady work as they would have been capable of had they maintained a good flesh condition. I am careful to note my horses' teeth occasionally and when any are found to be out of condition the animal is taken to the veterinarian and the defect remedied.

The maintenance of good digestion is important. By feeding a coarse and

unnutritious ration, especially to old horses, digestion may be so seriously deranged when spring arrives that they cannot maintain strength and proper condition even when fed a more generous ration. Whatever feeding stuffs are employed in the ration the horses should be fed regularly and uniformly at all times. They anticipate the feeding hour and become more or less nervous if it is delayed. Their digestive system becomes accustomed to a certain order which must obtain to secure the best results.

The Roughage Ration.

As to the hay portion of the ration for horses, I have fed none that gave me as good results as bright clover or alfalfa fed in moderate quantity. The idea that either of these is more apt to cause heaves than timothy or upland hay, is unfounded. It is true that clover often contains more dust than timothy and for that reason may be the cause of heaves but I know full well from many years of actual experience in feeding it that good clean clover has no superior as a hay for horses. When the hay is dusty it should be well shaken and then dampened with weak lime water before feeding. Then there will be no harmful results from its use. Alfalfa, although an excellent feed for horses must be fed with some caution. The hay racks cannot be filled up at night with alfalfa and the horses allowed to eat all night long, with good results. In fact, neither clover or alfalfa, both of which are very rich in protein, can be fed as carelessly as timothy. A very good way to feed hays is to mix them, using clover and timothy or alfalfa and timothy. Bright straw, either wheat or oat, can be used to good advantage in feeding horses. I have fed much of it. When the straw is run through a cutting box and then given a sprinkling of salt the horses will clean it up nicely.

The Grain Ration.

Some farmers feed a grain ration of corn exclusively during the entire winter but this ration lacks variety and can be improved otherwise by the addition of other grain mixtures. I like to feed corn and oats with a little oil meal. There is no other single grain that is as satisfactory in every way for horses as oats. I have tried feeding silage to my horses but they do not take kindly to it. It is a good plan to vary the feed as much as possible. On most farms this can be done without inconvenience and at practically no increased expense. If oats are fed, change to corn or a mixture of corn and oats, or any suitable mixture that will add variety. An occasional bran mash, say fed once weekly, will be found beneficial. It adds variety and improves the general condition of the horses. A few carrots or turnips sliced will also be relished. No exact quantity of grain per day can be stated because so much depends on local conditions and the individuality of horses and their feeders. The smallest quantity needed to keep up the desired condition and maintain good health and vigor is the proper quantity to feed. Close daily observation will determine this.

Other Factors of Good Care.

It is needless to say that horses should have plenty of good water, the animals being permitted to take a drink an hour or so before being fed so that none of the feed will be washed out of the stomach, which is apt to be the case if watering is done directly after eating. When the horses are idle a run in the pasture fields will do them good on bright days in winter, but in bad weather good quarters are demanded. Every morning and evening, whether working or not, my horses receive a good currying and brushing. The work of grooming is much more than repaid in clean skin and fine appearance of the coat. It makes the horses feel good and, of course, they do better.

Illinois.

W. M. HARDY.

Practical Science.

THE RELATION OF COST OF PRODUCTION TO SELLING PRICE.

(Continued from last week.)

Of the same tenor is the experience of the University, which is producing corn yields varying from 26 bushels per acre on continuously unfertilized land, to an average of 93 and a maximum of 120 bushels per acre on land which is excessively fertilized. It is making no money on either extreme; in the one because the yield is not sufficient to pay the labor, in the other, because the fertilizers are so costly as to swallow all the profits. The problem of the farmer, therefore, is to determine at what point between these extreme yields he must aim to fix his average yield, and in determining this point he must take into consideration the value of his land, the cost of labor, the cost of fertilizer, and the probable price he will receive for his product.

From this we see the impossibility of "doubling yields without increased expense," and also that when prices drop, the income of even the best farmers must decline, for extreme yields are profitable only with high prices. It must be clear that we cannot recklessly increase the yield per acre (by fertilization).

On the other hand, we cannot continue the old-time wasteful methods of soil exhaustion, cheap and effective though they were in their day, because they are resulting in decreasing yields in the face of increasing demands. If our declining yields, due to soil exhaustion, are to be arrested and turned into even a slight increase to meet the growing demands, it is clear that new methods must be employed, but the object must be a moderate increase in yield by economic methods and not extreme yields, which are bound to result in loss to the farmer or in prohibitive prices for food, or both.

Our farming is now in a transition stage between the "extensive agriculture" of the pioneer, in which fertility is disregarded and there is no investment but labor, and the "intensive agriculture" of old and densely populated countries, in which the main question is yield per acre, resulting either in high cost of food or in poorly paid labor. (China produces the most per acre but pays its laborers the least).

Our present yields are below what the climate and the general situation ought to produce, owing mainly to certain adverse conditions that can be cheaply and easily corrected and money put into this channel will well repay the investment because it will increase the yield without being subject to the law of diminishing returns. This is where our present duty and opportunity lie in establishing the foundations of a permanent agriculture. It must be remembered that we have not as yet reached the intensive stage, where it will pay either the producer or the consumer to attempt maximum yields on American land.

In this transitional stage, in which our yields are kept down by certain adverse conditions, the first step in a rational procedure is the correction of these conditions by relatively inexpensive methods, such as the use of lime to correct acidity, the application of cheap forms of phosphorous or of potassium to balance fertility, keeping nitrogen always the limiting element, a better adjustment of crops to soil and to locality, and the organization of more economic systems of farming with special attention to live stock, the distribution of labor, and the investment of capital. All the advice given out by the University of Illinois at this juncture is based upon this principle, because investments of this

character, whether of labor or of capital, are certain to increase the yield with relatively slight expense. Having done what we can in this way, we may await with confidence the intensive stage, the coming of which will be characterized by a permanent rise in prices.

The greatest hazard in farming is the season, against which improved methods are only a partial protection. The farmer with little or no capital must confine himself to practices that will pay every year, while the man with considerable means is free to follow those more expensive methods which pay best in the long run, even though an adverse season now and then might show a loss. This lack of capital cannot be remedied by short-time loans to the small farmer, nor by loans of any kind to the farmer whose yields are limited by bad cultivation or to the one incapable of managing his business upon the more complex and, to him, dangerous basis that will be at once established when he attempts to increase his yield by a larger use of capital.

It is commonly said that not enough floating capital is invested upon American farms, and it is doubtless true, but it must be remembered, both in extending credit and in making loans, that the American farmer has had little experience in handling capital. Manifestly, therefore, when he borrows, both he and the lender must be satisfied that the loan will be judiciously used, or it may result disastrously.

The student of agriculture cannot fail to see the danger of over-capitalization in attempts to secure abnormally high yields, a danger which increases as the practice spreads, for although one man may safely increase his yields without depressing the price, if all farmers were to follow his example the price would drop and all would lose money. Under this principle a few farmers will always be practicing methods not practicable for the mass. By this we see that in the long run the chief results of better farming will be realized by the consumer rather than by the farmer. All attempts to hold down production with the purpose of raising the price are as unavailing as they are unwarranted. The world wants food, and the principles herein presented are the ones that will guarantee its cheapest production.

Conclusion.

It is relatively safe, therefore, to invest capital freely upon the farm for the sake of correcting abnormal conditions and raising the yield to normal, but beyond that point it will pay only when prices rise. As we approach this point by reason of increased population with its increased demands, either the cost of food must rise or labor be greatly degraded, else the farmer cannot afford to produce the increase needed. As population increases, therefore, but one alternative will present itself—each human unit must become more efficient in production, or it must deny itself much of what is now enjoyed.

This circular is issued not as an argument for poor farming nor for the continuance of old-time methods, but to point out that we are not to step at once blindly into expensive forms of intensive agriculture. We should ascertain and practice those relatively inexpensive methods belonging to a transition stage that correct bad conditions and thereby considerably increase the yield, without seriously raising the price, so that the results may be profitable alike to the farmer and to the public whom he serves. In this good work there is no danger of doing too much.

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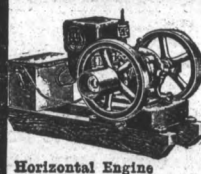
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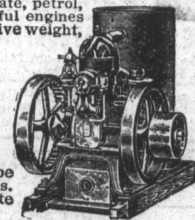
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R. C. W. Leghorns for sale pure bred cockerels. Also wish to buy 6 cockerels. **A. R. LEVEY, Elsie, Michigan.**

Pekin and White Indian Runner Ducks—Stock and prices will please you. **H. V. Hostetler, Route 1, St. Johns, Mich.**

BRO. FARMERS. We have just what you want in Barred and White P. Rock ckrls. From extra laying strain, large handsome fellows. Farm raised. For prices write. **RIVERVIEW POULTRY FARM, Box 798 Union City, Michigan.**

Barred Rocks—All prize winners and breeding stock at half price. Won 20 prizes last winter. **W. O. COFFMAN, R. No. 6, Benton Harbor, Mich.**

SILVER LACED GOLDEN and WHITE WYANDOTTES—A fine lot of White cockerels weighing 6 to 8 lbs. at \$2 and \$3 each. **Browning's Wyandotte Farm, Portland, Michigan.**

Pekin Ducks and Drakes—Only a few left. Eggs from prize winners. Write for prices. **R. O. FISHER, St. Helen, Michigan.**

PINE CREST WHITE ORPINGTONS—The great winter layers, winners at State Fair, pullets, cockerels, hens, also collie puppies. **Mrs. Willie Hough, Pine Crest Farm, Royal Oak, Mich.**

For Sale—White Plymouth Rock Cockerels, Fishel strain direct. Price \$3 and \$5. **Burr-Lawther, White Plymouth Rock Poultry Farm, Gaines, Mich.**

PLYMOUTH Rock cockerels 5 to 11 lbs., according to age, hens 5 to 8 lbs., 15 eggs \$1; Mammoth Bronze Tom Turkeys 8 to 35 lbs., according to age. Price \$8 to \$25, 10 eggs \$3. **A. E. ORAMTON, Vassar, Mich.**

DOGS AND FERRETS.

Trained Running Fox Hounds—30 Fox and Coon hound pups, 500 Ferrets, Puppies. Send stamp. **W. E. LECKY, Holmesville, Ohio.**

Fox and Wolf Hounds
of the best English strain in America
40 years experience in breeding these fine hounds for my own sport. Save your pigs sheep and poultry. Send stamp for catalog
T. B. HUDSPETH,
Sibley, Jackson County, Mo.
2000 Ferrets for sale. Write for price list. It's free. Guarantee safe delivery. **DeKleine Bros., Box 41, Jamestown, Mich.**

Poultry.

POULTRY WORK FOR DECEMBER.

December is the month we put the finishing touches to any winter preparations we have not already completed. Winter is pretty apt to come in earnest this month, and give little more opportunity for preparation.

Up to this time the grass has remained green unless we have had extremely severe weather for the season, so the hens have not needed much green feed, but now we must begin to feed our root crops or provide some other green or succulent feed for them. If we have stored the cabbage stalks they will serve for some time. Alfalfa meal will answer if we have no other.

When we see the flock spread out over the place on a warm day we certainly enjoy our pure blood poultry. A flock of pure color is an inspiration. It is a good idea to cull out any that mar the appearance of the flock whenever they are noticed, for when we are looking for them sometimes we cannot see the faults like they appear at others.

Give Hens Plenty of Room.

If we are going to sell any we should do it during the first part of the month, for prices drop usually a couple of weeks before the holidays and do not come up again until a couple of weeks after.

Now when the weather keeps the hens pretty close the bad results of over-crowding will begin to show. Give your hens plenty of room and they will pay for it. There is no economy in crowding them.

Give plenty of air and sunlight during the dark winter months. I like to have a scratching shed open on the south so the sun can shine the whole distance back under the roosts at the far side. It is a good idea to have the upper three or four feet made of sash with glass in it, as where the opening is the whole height and high enough to let the sun back it lets in too much snow on the scratching floor. The open front should be as high as the roof where they roost, though. Don't be afraid of the chickens freezing their combs in such a house, no matter how cold the weather, provided, of course, you have enough hens so their bodily warmth keeps the temperature up a little. About five or six hens to each foot in width is the number I usually put in such a house. My house last year was 24 feet deep from front to back and 14 feet wide, and it accommodated 80 hens very comfortably. It was four feet high at the back and 10 feet in front, with the whole front open. The snow only beat in four or five feet, and that was soon disposed of by the hens scratching among the straw under it and the sun coming in at the front. Not a chicken had a frozen comb. Still, I think the glass above would be an advantage and not cut off any of the necessary air supply.

Feed a Variety of Feeds.

Variety in feed spells winter eggs. A mash composed of one part meat meal and one part alfalfa meal to one part each of ground corn, bran and shorts, with a little salt and oil meal makes a complete ration with the corn at night and all the other grains you can get used in the scratch material. I like to feed boiled oats once a day, for oats are especially good for laying hens, fed either dry, boiled or sprouted. I always feed all the corn they will eat at night, though. Having the meat meal or crushed bone prevents egg eating, I have found. Begin right now to use lime freely if you have not already done so. Whitewash the houses and keep the ground pretty well dusted with it. It is a great preventative of disease and is so cheap and easy to use that no

one has an excuse for not using it. Keep books, too, for you never can guess at what the hens do profit you. You will be surprised at the result if you keep an accurate account and give your flock good care. **L. H. COBB.**

THE NEW BROOD.

The farmer just about gets his hens into winter quarters and accustomed to laying high-priced eggs, when he has to start to think of raising a new brood of chicks. He will undoubtedly give the matter of incubation and brooding considerable thought and will think over the merits and demerits of hen hatching and hatching by incubator.

There is no doubt but what the hen is a natural means of bringing the little chicks to life, but in the development of our poultry industry, we have deviated considerably from the ways of Nature. We have improved upon the hen so that she is a regular egg machine, but in the matter of hatching, we have never been able to encourage her toward any improvement. She is still uncertain and changeable. Being a living individual she has a mind of her own, and has ideas different than ours with reference to the time and place of hatching.

Incubation a Science.

Having developed the hen as an egg machine, we ought to give due consideration to a machine for hatching. The popularity of the incubator shows without doubt that it is the preferred method of hatching by most all who make any pretension of making poultry a business. Incubation has been brought down to a science, and being a science it is an improvement upon Nature. After we thoroughly understand an incubator which, by the way, consists mainly of following the directions of the manufacturer to the letter, we have a hatching equipment that is entirely under our control. We can hatch early so that we can take advantage of the early spring chicken market, or we can raise pullets which will mature early in fall and start laying when eggs are highest. The incubator will hatch a hundred or more where the hen will hatch only a dozen at most, and the care of an incubator is no more than the care of a single hen.

While the manufacturers of incubators are not in the business for love the poultry industry owes them a debt of gratitude, for without the incubator this business could not have developed as fast as it has. The mere fact that the largest poultry raisers use them is an indication of their worth.

Select Incubator which Best Suits

Your Purpose.

Spring is a busy time for the farmer and farmer's wife, and to be compelled to bother with a large number of setting hens at that time of the year should be considered a tax on one's energy, especially when all of the eggs being hatched could be put into one incubator. Incubators of all sizes can be bought so as to accommodate all sizes of poultry flocks. If for use in the hatching for a small farm flock, the small incubators are very satisfactory, but many farmers buy the larger sizes and do considerable custom hatching. This work starts early in spring before the farm work is started, and to many has become a pleasant and interesting source of income.

It is evident that the farmer is considering all means to increase the efficiency of his business. The poultry end of the farming business he does not always give the consideration he should, because he considers it the woman's part of the farm work. He makes a mistake in thinking this, for the poultry often returns larger profits for the time and money spent than any other part of the farm. He should, therefore, give due consideration to the improvement of the poultry department of his farm. When doing

this he must necessarily give the incubator serious consideration because it is one of the most important factors in placing poultry on a business basis. Study the advertisements of the manufacturers and send for their catalogs early so that you will have due time in considering the various features of the different makes. One can not be too early in considering these things, but may easily be too late.

A FEW HINTS ON THE CARE OF DUCKS.

With a little extra care, it is easier to get duck eggs in winter than hen eggs—provided one keeps the right kind of ducks. Of course, the Indian Runner is generally supposed to be the only duck that lays in winter, but we have had Pekin ducks that began laying every winter, in January, and continued until late in the spring.

Nearly everyone who keeps poultry of different kinds as a "side line" likes to have a few ducks. As a rule, they are not given a chance to do their best; because, instead of having a house to themselves, they have to sit in the hen house at night, or else in some shed.

Ducks Easily Cared For.

Beginners should have a definite object in view, when deciding to begin the raising of ducks. We have kept the Rouen, Mammoth Pekin, small-sized Pekin, Black Muscovy and Indian Runner. For several different reasons we like the Mammoth Pekin for market purposes better than any of the others. As a general purpose duck, we do not hesitate to recommend the good old Rouen. And for eggs give us the Indian Runner. When these little egg machines are well-cared for, they will lay more eggs in proportion to their number, than any kind of chickens we know of; not even excepting the Leghorn, which is hard to beat. We have always contended that it was easier to get duck eggs in winter, than hen eggs, under similar conditions. To begin with, provide the ducks with a dry, comfortable house, with plenty of straw or clean litter for bedding. We remove the soiled bedding, every day, with a pitch fork. Of course, this does not mean that all the litter on the floor is removed daily. The ducks usually crowd into a corner, when they "go to roost." They also lay their eggs on the floor, or among the bedding. If the latter is badly soiled, the eggs will be soiled, also. A duck-house can be cheaply built; or if only a few ducks are to be kept, almost any low shed or old building can be converted into a duck-house. A floor will not be necessary unless the spot where the shed is located shows signs of being damp. It is a mistake to imagine that dampness will not do a duck any harm. The fact is, if ducks are forced to sit in a damp house, or out of doors in bad weather, they will take cramps or rheumatism; if they take cold in the head (which they are liable to do) it is almost certain to turn to roup.

Protect Ducks from Cold.

If the walls are open, use tarred sheathing to make them draft-proof. Have some sort of window. On cold, stormy days, the ducks need shelter; keep them in the house. Feed regularly, morning, noon and night.

A warm mash, composed of cooked vegetables, boiled oats and corn meal makes a good morning ration. Allow them all they will eat, no more. We give the ducks some chopped raw cabbage, turnips, beets or apples at noon, with a little dry bran added. At night we feed whole corn, either boiled or soaked. Keep the feed and water troughs clean. In severe cold weather we give both ducks and hens tepid water to drink. Be sure to furnish plenty of clean, coarse sand; also other grit. Coal cinders are good for all kinds of poultry; especially laying hens and ducks. **ANNA W. GALLIGHER.**

Open Front Poultry Houses.

SOME people seem to think the writer is a crank on the subject of fresh air housing of poultry, but I am sure that if they ever expect to make much of a success in the poultry business they must eventually think to a large extent the same way. It took me quite a while to be convinced, and only after years of careful and unbiased experiments.

I have visited many poultry farms, both large and small, and state experiment stations in various parts of the country. One thing most noticeable was the change in the design of poultry houses. At almost every farm visited the owner was full of enthusiasm as soon as the subject of fresh air housing of poultry was mentioned and every experiment station was designing some kind of fresh air house for poultry. All agreed that that type of house was the most satisfactory and most economical in cost of construction.

Fresh Air Houses Popular.

I have been a fresh air convert for about the last five years, when this idea was just beginning to rapidly gain popularity, although it was originated several years before that time. I have planned and built during the last five years more than three dozen poultry houses, both large and small, and every blessed one of them was of the fresh air style and design.

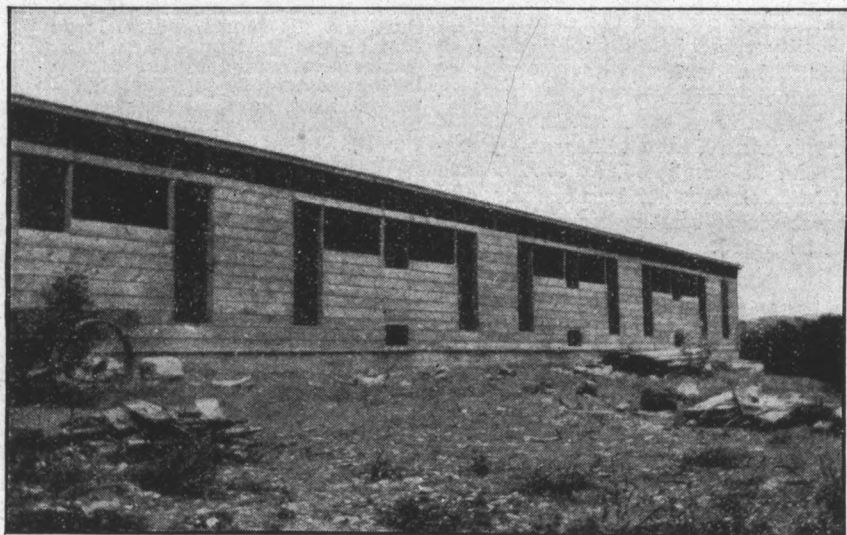
Last year we put up a large laying

litter. The windows and ventilators are also kept open wide, thus affording most excellent ventilation during the hot summer days and yet preventing the rain from beating in to any great extent during a thunder storm. Then there is also a ventilator exactly similar to the one in front, in the rear of the house also near the roof. This is opened during the spring and summer and you will be surprised what most excellent ventilation you will then have in your house, keeping it cool and pleasant at all times. This ventilator is kept closed tight in the winter, of course, the tighter the better.

Remodeling Old Buildings to Conform with Open Front Plan.

Those putting up a new building can do no better than follow this design, because it has been proven a most successful house all over the Union. Wherever you find these houses, and you find them all over, the owner is well pleased with them. Although I do not wish to go on record as saying that they are faultless, yet I am positive they are as perfect a shelter of poultry as any style designed up to the present time.

To those who are not going to build a new house, I would strongly advise remodeling all of their old buildings by putting in a front similar to the one described above. You will never regret it if you do. As long as the



A Good Type of Open-front House.

house 16x160 feet, built upon the combination front style, glass, cloth and wood, properly termed the fresh air house design. This year we are putting up another large laying house, 16x130 feet of the same design. We have been doing this for the last five years, which is a good indication that they must be giving satisfaction.

Description of House.

This style of house is so constructed that almost one-half of the front is arranged so that by a slight operation the windows and curtains can be opened, hence opening the house to the fresh outside air. There is also a large ventilator in the front, near the roof, running the entire length of the house. Then there are the large rectangular openings running with the length of the house, these are covered with one-inch poultry netting and a hinged frame covered with muslin so that fresh air can get in whether it is closed or not. It is open pretty near all the time, excepting on severe winter nights and days. There are also rectangular openings running parallel with the house, which are for windows hinged so they will open toward the outside. When the curtains are down during some severe winter days, the sun will still be able to shine into the interior through the glass windows. During the summer the curtains can be moved on the outside to open up, as they are all hinged with loose pin-butt hinges. In this way they supply shade and prevent the rain from beating in and moistening the

other three ends are air tight it does not matter much, as good results will be had.

Take a hammer and saw and cut an opening for a curtain frame to be covered with unbleached muslin, if you do not have too many windows it it as it is. If you have, then replace some of the glass windows with muslin-covered frames. You want to allow about one square foot of cloth curtain to 14 square feet of floor space and one square foot of glass to 16 square feet of floor space.

You will find this investment one of the best you have ever made, considering satisfaction and financial point of view.

New York. F. W. KAZMEIER.

MANNER OF FEEDING POULTRY.

Some poultrymen feed the right foods, but do not get eggs simply because the different foods are not fed in the right proportion. On most farms the hens are fed too much grain. The ordinary grains of the farm are deficient in protein, the food element that enters largely into the formation of eggs. Unless foods rich in protein are fed in addition to the grain, the hens will lay few eggs. To make eggs the hens must be supplied the proper foods in the proper proportion. Indiana. T. Z. RICHEY.

See our low clubbing offers on page 518 and save the price of the Michigan Farmer for three years.

Get the Eggs NOW While Prices are High

GILBERT HESS, Doctor of Veterinary Science, Doctor of Medicine



This is the time of the year when the price of eggs is high and your hens ought to be making up for the small egg crop during moulting.

But hens need a tonic during the winter months, because the lack of exercise and green stuff and also close confinement impairs the digestion, makes the system sluggish and the egg organs dormant. With the knowledge I have gained in a lifetime experience as a veterinarian, doctor of medicine and successful poultry raiser, I have succeeded in compounding a scientific preparation that will make poultry healthy, make hens lay and keep the egg organs vigorous and active.

Dr. Hess Poultry PAN-A-CE-A

contains ingredients for toning up the digestive system and enriching the blood. It also contains tonics for toning up the dormant egg organs and making hens lay, internal antiseptics for preventing and remedying gapes and other ailments, also bone and shell forming ingredients. Every single ingredient in my Pan-a-ce-a (printed on every package) bears the recommendation of the U. S. Dispensatory and other high authorities. Now read this carefully:

So sure am I that Dr. Hess Poultry Pan-a-ce-a will make your poultry healthy and make your hens lay that I have authorized my dealer in your town to supply you with enough for your flock, and if it does not do as I claim, return the empty packages and get your money back. Buy now on that guarantee.

Sold only by reputable dealers whom you know, never by peddlers. 1 1/2 lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50 (except in Canada and the far West). Pan-a-ce-a costs only 1c per day for 30 fowl.

My new poultry book tells all about Pan-a-ce-a. It's free. DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Stock Tonic

Your cows, horses and hogs are pretty apt to get out of fix during winter, because grain, hay and fodder do not contain the natural laxatives and tonics so abundantly supplied in grass. Lack of exercise is another thing that retards good health.

Dr. Hess Stock Tonic contains tonics that improve the appetite and tone up the digestion, laxatives for regulating the bowels, and vermifuges that will positively expel worms. I guarantee it. 25-lb. pail \$1.00; 100-lb. sack \$5.00; smaller packages as low as 50c (except in Canada, the far West and the South).

Dr. Hess Instant Louse Killer

Kills lice on poultry and all farm stock. Dust the hens and chicks with it, sprinkle it on the roosts, in the cracks, or kept in the dust bath, the hens will distribute it. Also destroys bugs on cucumber, squash and melon vines, cabbage worms, etc., slugs on rose bushes, etc. Comes in handy sitting-top cans, 1 lb. 25c; 3 lbs. 60c (except in Canada and the far West). I guarantee it.

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DETROIT, DEC. 5, 1914.

A FEW LEADING ARTICLES OF THE WEEK.

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MUCH FOR LITTLE!

Much in the way of value received for a very little investment in money is better than "something for nothing" sometimes ostensibly offered by publishers to secure subscribers, but always with a string tied to it. Those who have been regular readers of the Michigan Farmer will, we believe, concede that they have received much in real value for the little sum which they invested in a subscription. But we propose to give them more in real value for still less money in the future—if they subscribe for three or more years. These plans were made before the outbreak of the European war, which has resulted in a marked advance in price of many materials used in the making of a paper, and its continuation may force an advance in subscription prices. But for the present we are adhering to plans already made and on page 519 of this issue will be found an announcement of a special inducement to subscribers who renew early this month. In addition to the seasonable matter always found in the several departments of the Michigan Farmer, we are this year publishing a series of special articles on carefully selected subjects. Some of these have already appeared in our November issues, and will be continued, one each week, for the entire

year. These special topics, yet to be presented are as follows:

- Agricultural Co-operation in Europe.
Farming as a Business.
Farming without Live Stock.
Possibilities and Limitations of the County Agricultural Bureau.
The Inside of the Grain Market.
Bacteriology and the Farmer.
Growing and Selling Certified Seed Potatoes.
Benefits of Breeders' Associations in Michigan.
The Relation of Chemistry to Agriculture.
Laws Relating to the Property Rights of Women.
Tree Surgery.
The Emergency Medicine Chest.
The Undeveloped Agricultural Possibilities of Michigan.
Home Canning for the Fancy Trade.
The Field Pea in Michigan Agriculture.
The Farm Cost of Dairy Products.
The Secret of a Successful Farm Life.
Canning Factory Crops for the General Farmer.
Growing and Marketing the Draft Horse.
Rural Sanitation.
Small Fruit for the Average Farmer.
Poultry as a Factor in Farm Profits.
Mechanical Helps in the Home.
The Truth About Ginseng.
High School Agricultural Education.
The County Y. M. C. A. Movement.
The Development of City Markets.
The Place of Soy Beans in Michigan Agriculture.
Horse Breeding as a Side Line.
Bee Keeping for the General Farmer.
Cowpeas as a Forage Crop.
Baby Beef as a Specialty.
Getting Results from Spraying.
Vetch as a Soil Builder.
Training the Colts.
The Development of the Apple Market.
Peach Growing as a Specialty.
Methods of a Michigan Woman in Gardening.
The Gasoline Engine for Farm Work.
The Outlook for Michigan's Stock Feeding Industry.
Essentials of Concrete Construction.
The Renovation of Old Orchards.
The Farmer's Banking Problem.
Production Costs on the Average Farm.
The Economic Relation of Wild Life to Agriculture.
Storage Crops on the Farm.
Rural Recreation.

CURRENT COMMENT.

Approximately one and a half million automobiles have been sold in the United States since 1902, when the business began to assume commercial importance. Most of this vast number of machines are still in use in some capacity. Of this number it is estimated that almost 50 per cent are owned by farmers. That this percentage is bound to increase rapidly each year is an inevitable conclusion reached from an analysis of the conditions surrounding the trade.

Making a reasonable allowance for the comparatively small number of machines which have been "scrapped" up to the present time, it would appear from these figures that there is now one automobile in use for each 70 or 80 people in the country. The proportionate number of farmers now owning automobiles is probably as high as the proportion of our urban population owning machines, but this proportion has increased much more rapidly in the country during recent years. This is the natural result of a wider utility use of the automobile on the farm than by the city owner. With an increased development of good roads such use will be still further extended and an increased number of

farmers will find it profitable to own automobiles.

As to the financial ability of the farmers of the country to supply their needs in this regard there can be no doubt. There are nearly six and one-third million farms in the United States, with an average value as shown by United States census figures, of \$6,444. It is not inconceivable that ultimately an automobile of some kind will be included in the equipment of the average farm, since the utility value of a such a machine is undoubtedly greater on the average farm than in the business of the average urban resident. But that is a long way in the future. It is, however, a reasonable assumption that at least one-third of the farmers of the country are better able to add an automobile to their equipment right now than is the average city man owning a machine to maintain such a luxury. To supply this proportion of farmers with machines would require a larger number than the entire aggregate of sales in this country during the dozen or more years which have marked the development of the industry. In the meantime a considerable number of machines will be required to replace the older and less efficient types which were slips in the development of the present-day machine, besides an urban demand of still considerable proportions.

That few of these older and less efficient types of machines are farm owned is proof of the fact that farmers are practical men in the buying of automobiles as well as other equipment. They awaited the development of utility types of automobiles before buying. But with the development of dependable machines with a high utility value, they have become liberal buyers. And where utility and pleasure can be combined, as is the case with the automobile on the farm, the largest future market for automobiles will be found.

An Important Announcement.

The farm and not the experiment station is the final court of appeal in matters pertaining to agriculture. This fact is being more generally recognized today among agricultural scientists and leaders in rural advancement and reform. It frequently happens that results obtained under experimental conditions cannot be duplicated upon the farm. On the other hand, practical farmers frequently gain information about the growing and marketing of crops that escapes the attention of persons working under ideal conditions. It was with this in mind that a survey of commercial apple orcharding in Michigan was worked out by gathering together the experiences and opinions of the most progressive orchardists in the state. The survey was made under the auspices of the Michigan Experiment Station by John W. Fisher, Jr., formerly located at the Agricultural College, but now connected with the Office of Markets in the United States Department of Agriculture. The survey continued over a period of two years, and there were 177 complete sets of answers made. Besides this work among the growers 200 commission men on the markets of the middle west were questioned to ascertain the most profitable varieties to plant as seen from the marketing standpoint. The commission men were most generous in giving out information that would help growers in the selection of varieties. Mr. Fisher has just been engaged to write for The Farmer a series of articles covering the entire range of the survey he has made. These articles will appear alternately in the Farm Commerce and the Horticultural Department of this journal. The first of the series will appear in next week's issue, and will give the opinion of 177 of the foremost orchardists of the state on the relative merits of the box and barrel

as packages best suited to Michigan apples. This will be followed by a discussion on the ten best varieties of apples for the commercial orchardist to plant in this state. Not only will the views of growers be given but the opinion of commission men and dealers will also be weighed. Other subjects will be dealt with in succeeding issues. The Michigan Farmer has secured the exclusive rights to the publication of the entire series. We are positive that this survey as reported in this series, will appeal not only to the man who produces apples exclusively, but also to the general farmer who may have only a small orchard, and to every person who contemplates the planting of apple trees.

LEGAL QUESTIONS ANSWERED.

For the accommodation of our subscribers, we have arranged with Mr. Allan Campbell, a competent attorney, to answer legal inquiries for our subscribers. For this service a fee of 25 cents for each question will be charged to insure that only questions of importance will be asked. This will bring a personal letter of advice from the attorney, to whom the questions are referred. Address Legal Department, Michigan Farmer, Detroit, Mich.

HAPPENINGS OF THE WEEK.

The European War.—Great confusion characterizes the war reports for the past week. There appears, however, to have been a great conflict on in Russian Poland, and the reports give the Russians credit for one of the most decisive victories of the war thus far. It seems that a large portion of the German forces was practically surrounded by the Slavs. The losses around Lodz is stated to be particularly heavy. It is estimated that 6,000,000 men are engaged along the line of battle in western Russia, eastern Germany and Austria. The Russians are also reported to be occupying the passes of the Carpathian Mountains, and are therefore better situated to complete the conquest of Galicia than they have been at any time since hostilities began. Scarcely any offensive work has been undertaken by either side in the western war zone. The Germans have apparently been working to establish themselves on the coast of the North Sea, but through the efforts of the Belgian forces, assisted by the British and French and the British navy, this work has not been successful. It is the belief of war experts that German troops have been withdrawn from the west to engage in the greater conflict now on in the east. Reports from Geneva, Switzerland, state that 101 trains of 50 cars each conveyed artillery and cavalry from Flanders to the German eastern frontier.

Affairs in Mexico remain unsettled. Late advices state that Gen. Gonzales, one of Carranza's divisional chiefs, has proclaimed himself provisional president of Mexico and has named a cabinet. He holds a position north of Mexico City, and has a force of 8,000 men.

An earthquake occurred last Friday in western Greece and the Ionian Islands. Twenty-three persons were killed and 125 acres of land inundated.

South American countries have proposed to the United States a convention providing for the withdrawal of belligerent warships from waters of the western hemisphere. This proposition has been concurred in by the neutral countries of Europe, especially the Scandinavian and Dutch kingdoms which have suffered most from the present war.

National.

According to the Bureau of Foreign Commerce our trade with Germany during October this year was less than one-half of what it was a year ago, while our trade with Great Britain has remained about normal. The same authority notes that American trade with Russia has increased since the war broke out, while our sales to Japan have declined.

The New York Stock Exchange opened last Saturday for the first time since the outbreak of the European war. By reason of the fact that the New York Exchange was the last to close and among the first to open, the financial position of this country is considered very encouraging.

The breakwater at Ludington, Mich., has been finished. This work was begun by the federal government six years ago. This \$1,000,000 harbor is the greatest breakwater on the eastern shore of Lake Michigan.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND *LIVE STOCK* JOURNAL
PUBLISHED WEEKLY. ESTABLISHED 1843.

The FARM BOY
and GIRL
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.

WORLD EVENTS IN PICTURES.



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British Hospital Ship Wrecked off English Coast



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Flooded Ypres Canal where German Soldiers Met their Doom.



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The Smoke in the Background is from a Shell which Has Just Exploded.



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Street Scene in Nieuport Showing the Work of German Shells.



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German Captives and their Belgian Captors Resting in a Wheat Field.



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Belgians Planting Machine Gun in Beet Field to Repulse German Attack.

The Versatility of the Pioneer.

By WILLIAM VERNON.

OVER against the picture of the humdrum life of the average factory man, who must ever be an employe, always subject to the domination of someone higher up, whether foreman or superintendent, always machine-like, and holding tenure of his job on the condition of making money for someone else rather than himself, I wish to depict the life of the agriculturist, and especially the pioneer as a contrast.

In so doing I take as a type one Jacob Runion, whom I met several years ago in the state of Minnesota. This man stands out in my mind as one who will typify the lives of thousands who have made this land what it is, and it is my desire to pay a merited tribute to the men and women who, like Jacob Runion and his faithful wife, met and solved the perplexing conditions that confronted the early settlers of our country.

Jacob Runion was a native of Canada and born to people of little property who were obliged to work out their own success in fortune-making, if fortune-making may be considered success. He inherited little else than a strong physique and capacity for hard manual labor. He was apprenticed to a blacksmith and completed the trade shortly before the period of our war between the states. He married and with his young wife started for our west, settling in middle Minnesota. He took up his claim and started upon the most interesting of human occupations, that of home-making. He cut down the trees, built his log cabin, cleared a small portion of his land, for the home acre to furnish the vegetables and fruits for their table. The furniture for the cabin was also of his own handiwork. His tools were largely of his own fabrication, for like the hero of the Finnish epic, who set up his forge in the intestines of the dead magician, so did Jacob Runion set up his forge in the wilds of Minnesota, and there forge the things of frontier necessity. He hunted for food, and his rifle brought meat when domestic meat could not be had. He laid tribute upon the streams and made them also provide the fish. He tanned the hides and made the leather for harness and for boots. He made these things from the leather he had made and so clothed his growing family. The barns were easily constructed by himself aided by neighbors who were in turn helped in their own building enterprises, as payment.

So far their only opposition had been from the stern conditions of a new land in a rigorous climate, and these were as nothing to these two hopeful, healthful young people. These were well nigh conquered when, as though the fates had not sufficiently tried this strong man, a new, a fearful danger threatened. Rumors came of an uprising of the Indians, who had theretofore been quite friendly. Rumor became certainty and Jacob Runion with his wife and their young children, hurriedly abandoned their hard won home, and with their team and few articles of necessity, hastened to the nearest settlement, Hutchinson. Here they found others who, like them, had hurried to gather together for safety.

These farmers became soldiers. Military organization was effected with a loss of no time, for necessity was the spur. With them, arms were as familiar as the tools of their toil, in fact, arms were tools of daily toil in this country. Trees were cut down, a stockade built, and within was gathered the wagons and families of the threatened pioneers. The women cooked over open fires, the children romped and played, and the men stood at the loopholes and held off a thousand

maddened reds. For many days it was a matter of extreme uncertainty who would win, but these men won, as they had always won, when difficulties opposed them. They fought the human enemy as they had fought the elements, had fought the stubborn soil, they fought for life, for their wives and children, and they succeeded. They won out after a long period of uncertainty. They went back to their claims, and Jacob Runion found that his buildings had been burned and whatever was combustible had been sacrificed. He went at it again, and so great was the recuperative energy of this man and his wife, that they soon had better homes for themselves and their stock than ever before. Besides they felt more secure, for they had a double title, that of conquest added to that which the government granted. This clearing was theirs by every right that has given sanction to land titles from the most primitive times.

But now their children were growing up and their future became the care of the parents, and soon afterwards we find them selling out and going on to the more frontier-like portions of the state. When I met Jacob Runion he lived in the wheat belt and his children were men and women. He had his little farm, and was taking a restful season from his arduous life. He had studied land surveying and was in demand as a "timber cruiser." He had taken up as a pastime ama-

teur photography, and was fond of exhibiting his pictures. He was intelligent and talked with interest of the great questions of the day and his discriminating mind seldom failed to see the right side. He had a fund of knowledge that he had gained from observation, a "knowledge never learned of schools." He would have been a study for John Burroughs, or Ernest Thompson, and neither had as much wood lore as this man of the woods.

On a later visit to northwestern Minnesota, I found that he had gone on further west; this time taking his children and grandchildren, or rather being taken by them, he had gone on into the Canadian Northwest, where they hoped to find a more ample country to be taken up by the now numerous family of three generations.

This is the plain and brief story of a pioneer, and it is given here to show how hallowed are many of the farms by the sacrifice of our fathers. Jacob Runion, unknown to the historian, unsung by the poet, a name new to every reader of this paper, typifies the best products of our republic. Compared with this man, the name of many a captain of industry sinks into insignificance, when the real achievements of their respective lives are scrutinized, and when the true mettle and worth of our pioneers are recognized, then will we give to the farms they cleared, and the homes they made, a higher value and with this will come reluctance to surrender these places into the hands of the newly arrived emigrant from Europe who are so fast becoming the land owning element in our population.

her approval would have followed you. And now sow in hope, and God speed your plow!"

She turned away almost abruptly, and Winston stood still with one hand closed tightly and a little deeper tint in the bronze of his face, sensible at once of an unchanged resolution and a horrible degradation. Then he saw that the Colonel had helped Miss Barrington into the saddle and her niece was speaking.

"I have something to ask Mr. Court-horne and will overtake you," she said.

The others rode on, and the girl turned to Winston. "I made you a promise and did my best to keep it, but I find it harder than I fancied it would be," she said. "I want you to release me."

"I should like to hear your reasons," said Winston.

The girl made a faint gesture of impatience. "Of course, if you insist."

"I do," said Winston quietly.

"Then I promised you to have my holding sown this year, and I am still willing to do so, but though my uncle makes no protest, I know he feels my opposition very keenly, and it hurts me horribly. Unspoken reproaches are the worst to bear, you know, and now Dane and some of the others are following your lead, it is painful to feel that I am taking part with them against the man who has always been kind to me."

"And you would prefer to be loyal to Colonel Barrington, even if it costs you a good deal?"

"Of course," said Miss Barrington. "Can you ask me?"

Winston saw the sparkle in her eyes and the half-contemptuous pride in the poise of the shapely head. Loyalty, it was evident, was not a figure of speech with her, but he felt that he had seen enough and turned his face aside.

"I knew it would be difficult when I asked," he said. "Still, I cannot give you back the promise. We are going to see a great change this year, and I have set my heart on making all I can for you."

"But why should you?" asked Maud Barrington, somewhat astonished that she did not feel more angry.

"Well," said Winston gravely, "I may tell you by and by, and in the meanwhile you can set it down to vanity. This may be my last venture at Silverdale, and I want to make it a big success."

The girl glanced at him sharply, and it was because the news caused her an unreasonable concern that there was a trace of irony in her voice.

"Your last venture! Have we been unkind to you, or does it imply that, as you once insinuated, an exemplary life becomes monotonous?"

Winston laughed. "No, I should like to stay here—a very long while," he said, and the girl saw he spoke the truth, as she watched him glance wistfully at the splendid teams, great plows, and rich black soil. In fact, strange as it may appear, it will be virtue, given the rein for once, that drives me out when I go away."

"But where are you going to?"

Winston glanced vaguely across the prairie, and the girl was puzzled by the look in his eyes. "Back to my own station," he said softly, as though to himself, and then turned with a little shrug of his shoulders. "In the meanwhile there is a good deal to do, and once more I am sorry I cannot release you."

"Then, there is an end of it. You cannot expect me to beg you to, so we will discuss the practical difficulty. I cannot, under the circumstances, borrow my uncle's teams, and I am told I have not sufficient men or horses to put a large crop in."

"Of course!" said Winston quietly. "Well, I have now the best teams and machines on this part of the prairies, and I am bringing Ontario men in—I will do the plowing—and, if it will

(Continued on page 504).

Winston of the Prairie

BY HAROLD BINDLOSS.

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Synopsis of Previous Chapters.

Farmer Winston, a bankrupt homesteader, accepts a proposal to simulate Lance Courthorne, an adventurer. Courthorne and his pals struggle with the police, kill Trooper Shannon, who leaves evidence pointing to Winston as the murderer, and smuggle through some illegal distillery products. To Silverdale, a settlement founded by Colonel Barrington, Maud Barrington, his niece and ward, has just returned from Montreal. The Colonel is worried over a fall in wheat prices, and also over the coming of Lance Courthorne, Miss Barrington's cousin, to Silverdale to claim a share of his father's estate. Maud Barrington learns more of her cousin's unsavory past. Winston, in the meantime, pushes on to Montana, is held for Courthorne by an officer, who discloses to him the belief that Winston is the murderer of Shannon. Mail for Courthorne is opened by Winston. Complying with instructions in the letter, he meets and confers with a lawyer respecting Courthorne's inheritance at Silverdale, visits the colony. Some of his actions fail to tally with Courthorne's reputation. He wins the good will of Dane, the Colonel's adviser. The real Courthorne, supposed to have been drowned during the smuggling, now reappears in Montana, meets Ailly Blake, whose life he had blighted and who is now engaged to one Potter, rancher. Winston, returning from Winnipeg, finds Miss Barrington at one MacDonald's, and in an attempt to reach Silverdale they are caught in a blizzard. The night is spent at a lonely building and the following day they reach home through the heroic efforts of Winston. Miss Barrington promises Winston to sow her land to wheat the following spring. He in due season, begins planting operations in spite of the Colonel's adverse criticism.

CHAPTER XII.—(Continued).

Maud Barrington, had seen his gesture, and something in that thought that impelled it, as well as the almost statuesque pose of his thinly-clad figure, appealed to her. Courthorne as farmer, with the damp clean effort on his forehead and the stain of the good soil that would faithfully repay it on his garments, had very little in common with the profligate and gambler. Vaguely she wondered whether he was not working out his own redemption by every wheat furrow torn from the virgin prairie, and then again the doubt crept in. Could this man have ever found pleasure in the mire?

"You will plow your holding, Lance?" asked the elder lady, who had not answered his last speech yet, but meant to later.

"Yes," said the man. "All I can. It's a big venture, and, if it fails, will cripple me, but I seem to feel, apart from any reason I can discern, that wheat is going up again, and I must go through with this plowing. Of course, it does not sound very sensible."

Miss Barrington looked at him

gravely, for there was a curious and steadily tightening bond between the two. "It depends upon what you mean by sense. Can we reason out all we feel, and is there nothing, intangible but real, behind the impulses which may be sent to us?"

"Well," said Winston, with a little smile, "that is a trifle too deep for me, and it's difficult to think of anything but the work I have to do. But you were the first at Silverdale to hold out a hand to me—and I have a feeling that your good wishes would go a long way now. Is it altogether fantastic to believe that the good-will of my first friend would help to bring me prosperity?"

The white-haired lady's eyes grew momentarily soft, and, with a gravity that did not seem out of place, she moved forward and laid her hand on a big horse's neck, and smiled when the dumb beast responded to her gentle touch.

"It is a good work," she said. "Lance, there is more than dollars, or the bread that somebody is needing, behind what you are doing, and because I loved your mother I know how

How These People Saved Money.

By CARL SCHURZ LOWDEN

THE saving of money is an art that most persons acquire only after a number of adverse and unfortunate experiences. Benjamin Franklin said: "Experience is a dear school but fools will learn in no other." We may not fully agree with the sage that created Poor Richard and his wonderful maxims, but if Franklin did not hit the nail on the head he came very close to it. Experience is a great help in the acquiring of the art of saving.

To most of us keeping an account book implies too much drudgery. We may get a new book, start off nicely and do very well for a time, but after a while we permit the work to lapse and finally discard it altogether with a great feeling of relief.

There is no single rule of saving that will fit everybody. Usually a systematic and well-directed effort will conquer the "bogie" of excessive expenditure. System is the key, for without it there can be no plan, and the work will be haphazard. Adopt a plan and stick to it.

I shall tell you how a young school teacher saved from her salary. She was able to accomplish her plan only after repeated effort, but persistence finally won out and she acquired the habit of a systematic and regular saving that placed a big share of her salary in the banks, whereas before it had slipped through her fingers and apparently done nobody any particular benefit. When she realized she was extravagant and a spendthrift, she set about to right the wrong, and here is the plan she adopted, told in her own words:

"After all, in many ways I am more practical than some people I know. I have managed the saving and spending proposition satisfactorily. From my mother I learned how to be economical. It is quite an art as there are many interesting things to be learned. If one is very careful about the 'incidentals' or the little things that often make such a big item of expenditure, the outlay for this particular class will steadily become less and less.

"Real saving requires a careful book-keeping system. I regularly put away one-fourth of my salary. I estimate my expenses for each week and allot a certain amount to each day. I spend no more than that amount, no matter what comes or goes or happens. I will not permit myself to violate the rule and I steadfastly refuse to listen to any temptation that would lead me to depart from my pre-determined plan. I stick to it firmly. I save over from one day to another extra money from various occasions that come up unexpectedly.

"I put my savings away first. Then I lay aside my daily expenses. I have a reserve box for the money I save from one day to another and for all other savings except my regular one-fourth which I put in the banks immediately and from which fund I draw nothing out. I never permit myself to spend more than the daily allotment. I usually spend much less and the margin I religiously place in the reserve box. I always keep an accurate record of my expenses.

"In beginning to learn to save, one should eliminate the foolishness that one can do without. This does not mean that one should not have a good time or that he should appear cheap in any respect. A person can be generous and liberal when occasion demands, but the means for the generosity and the liberality absolutely must come out of the reserve box.

"Of course, there are other methods. This is the one I use, and I find it successful: My expenses are small; they need not be otherwise. I save a goodly part of my salary, much more than the one-fourth as the reserve box al-

ways contains a comfortable surplus. Where one's expenses are great by force of unsurmountable circumstances, the proportion that can be saved is relatively smaller. The secret of it all is this: put everything on a systematic basis."

This school teacher never saves less than \$300 a year from a salary of \$800. The last time I met her she had secured an increase. She intended to save \$500 that year but I never saw her afterward to find out whether she did or did not succeed.

The average young man goes along in a merry happy-go-lucky way until he meets the right girl. Then he stops stock-still, and does some rapid introspection. He faces the situation. Can two people have a happy home on the money I am making? Can I save enough money for a start in housekeeping?

One young man solved the question after he had spoken frankly to the girl and she had given him some helpful suggestions. She cross-examined him carefully in the manner of an attorney and ascertained the fact that he was spending too much for the supposed-to-be little things. For instance, he smoked an average of three cigars daily. She recommended that he cease paying ten cents each for his cigars, and that instead he smoke two a day, a ten-center and a five center. In that one item there was a saving of one-half, for he immediately adopted the plan.

The girl quizzed him further and found out he spent a lot of money for magazines. "Don't do it," she said, "go to the public library and read them there." She asked him if he went to the moving-picture shows and he admitted he went every night of the week except when he came to see

given to each of the other children on the marriage date. The young man has now solved the secret of successful saving. Life has meant much more for him since he acquired that art which the right girl disclosed to him, when he frankly confessed his inability and the belief that he was a spendthrift.

Another way to save is to force yourself to it. Go in debt, so to speak, and resolutely pay out. A friend of mine, whom I will call Bill Smith, did it in this fashion. He took out life insurance policies on which he had to pay a good-sized premium. He met the payments because he had to. There was no other way out. He bought some land, paid so much down and agreed to pay a certain amount semi-annually. Bill Smith's word was good, and in order to keep his reputation unsullied he met the payments promptly. He had to do it. The ability to obtain credit means a great deal to any man. If he forfeits his right, if he gives men reason to mistrust him, the action may turn his life upside down. It was up to Bill Smith to make good on every obligation, and Bill Smith did so with regularity.

"A couple of years more and I'll own this land," said Bill to me one day. "Those insurance premiums are still coming up, though, and I won't be paid out for fifteen years yet, but

then all except one of my policies will be paid up and I ought to get enough dividends from them to keep the other one going. Say, I'm certainly hun-gry for that day of release from enforced scrimping and everlastingly reminding that Bill Smith absolutely must not spend one dollar foolishly."

Bill's wife was back of it all. She had insisted that he take out the insurance, buy the land, and dress the children well. She had helped him to save. Of course, Bill had what might be termed a pretty hard row to hoe, but still his wife's action forced Bill to acquire a habit of thrift which throughout all the years has stayed with him. That early necessity for saving made Bill a stronger man, it shaped his life better than he knew. Bill and his wife have nothing to fear as there is a big surplus laid up against the biggest "rainy day" that can develop, and a comfortable old age is in store for them, all because they learned the art of saving by system and routine when they first decided to cast their lot together and enter on life's long journey.

Is it too much to say that the art of saving is the keynote of a successful life, that without the ability to save, a man is like a ship without a rudder that is forever drifting but gets no-where?

Manual Training and the Country Boy.

EVERY normal boy has a passion to make something. He wants to build with his own hands. A hundred things within his ability to make could be suggested to him, any one of which would appeal to his nature if he but had the tools, the place and the time to do the work.

Farm boys have advantages and disadvantages in being trained for working in wood and metal. Among the

out things he has never known how to do before.

On the other hand, the country boy is often handicapped in becoming a good wood or metal worker because most of his training is crude. The usual duties demanded of him along this line are of the roughest character. His knowledge of the fitting and handling of tools is limited by his own experience, and the principles underlying the shaping of wood and iron and the devices for accomplishing this in the most economical manner have never been suggested to his mind. As a result, the product of his efforts is apt to be discouraging.

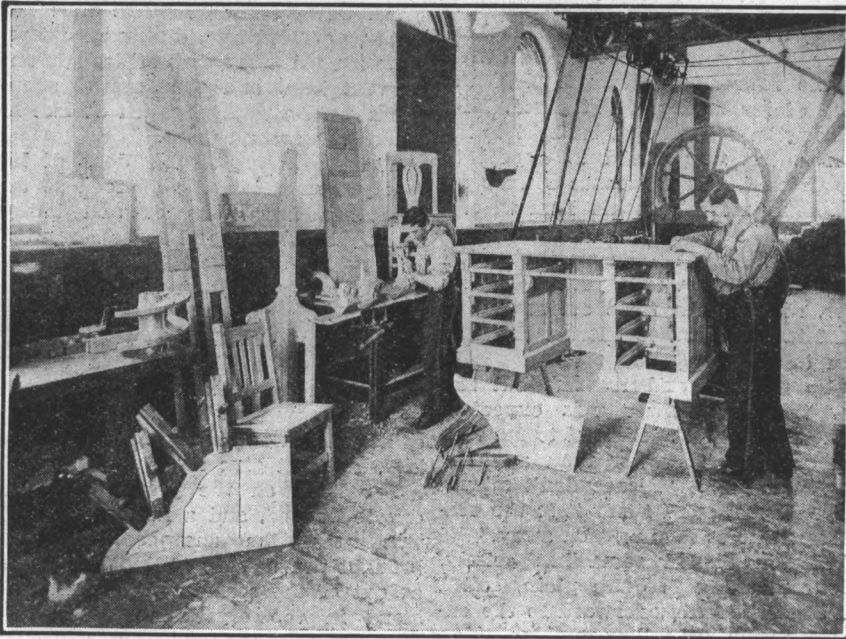
Could he have the advantage of a manual training course with a good instructor, where these suggestions would be made and the fundamental principles taught in connection with the proper use of good tools, what results would we get? Experience, inventive genius and training—these make the perfect workman and it is the observation of teachers that the country boy usually leads the class in this department of high school work.

But the country boys who can avail themselves of a course in manual training at the present time are few. So other provisions are needed for the great majority. While some improvised substitute could not be expected to serve every lad as well as a school course would, yet it has been found that the conditions needed in most cases can be provided where a little thoughtful attention is given by the boy or his parents.

In the first place, a work-room is needed. This may be a room entirely devoted to the use of the boy, or it may be a corner in a larger room. It lies within the possibilities of most farmers to provide such a place if there is a will to do so. If the boy has the initiative to fit up a place for himself only the most urgent need should decide parents or others to appropriate it for other purposes, and then only after consultation with the boy. It should be his to control.

Then good tools should be selected. A boy will take pride in tools that are worth taking pride in. The results of using them will also add to his interest. It is folly to reason that for a boy anything will do. First-class hammer, saw, square, planes are what the boy should have.

Before purchasing these tools the boy should spend an evening or two



Training, Inventive Genius and Practice Make Skilled Workmen.

her. The girl said that two nights for the pictures was enough. The young man was paying \$3.50 a week for his room and \$5 for board. Under her guidance and inspiration he reduced the figures to \$2.50 and \$4 with a weekly saving of \$2.

"You hire a rig and take me out riding every Sunday," said the girl, "and I appreciate it, too, but we can save that money and have as much real pleasure by walking. You take me out to suppers and buy flowers for me. Let's cut it all out and lead a simpler life."

The young man gave all his savings to the girl and she in turn deposited it in a bank. At the end of a year more than \$200 had accumulated in this account. The girl had saved some money out of her own income. They were married. On the day of the wedding (which was in good taste but not expensive) her father gave them \$250 in cash, the amount he had

advantages is that farm life demands much use of the saw, hammer, file, drill, etc. Scarcely a day passes that the boy out in the country is not called upon to use some of the ordinary carpenter's or mechanic's tools. By natural training, then, he becomes more or less familiar with tools and learns how many common operations are done.

The country boy's creative mind is also called upon liberally. He is put in positions where he must think of ways and means to get out. A horse gets caught in the stable, his steers run away and break through the garden fence, apples on the highest branches of the tree tempt him, the gable of the barn offers the best support for his bird nests, he must use various materials to complete the dog harness, all of these and a thousand more situations demand that the country boy think and do; and this thinking and doing teaches him to reason

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with a good carpenter. Together they should go over the list carefully and the important points about each tool should be inquired into, so that better judgment may be had in purchasing. This information will also be valuable afterwards.

When the tools have been secured the carpenter should be called upon again for pointers on caring for tools and how to keep them in the best condition for use. It is probable that this questioning will need to be continued for some time, but if the older person is a good friend he will be pleased to help at all times and answer questions willingly. The same plan can be used to gain information on how to go about a specific job.

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WINSTON OF THE PRAIRIE.

(Continued from page 502).

make it easier for you, you can pay me for the services."

There was a little flush on the girl's face. "It is all distasteful, but as you will not give me back my word I will keep it to the letter. Still, it almost makes me reluctant to ask you a further favor."

"This one is promised before you ask it," said Winston.

It cost Maud Barrington some trouble to make her wishes clear, and Winston's smile was not wholly one of pleasure as he listened. One of the young English lads, who was, it appeared, a distant connection of the girl's, had been losing large sums of money at a gaming table, and seeking other equally undesirable relaxations at the railroad settlement. For the sake of his mother in England, Miss Barrington desired him brought to his senses, but was afraid to appeal to the Colonel, whose measures were occasionally more Draconic than wise.

"I will do what I can," said Winston. "Still, I am not sure that a lad of the kind is worth your worrying over, and I am a trifle curious as to what induced you to entrust the mission to me?"

The girl felt embarrassed, but she saw that an answer was expected. "Since you ask, it occurred to me that you could do it better than anybody else," she said. "Please don't misunderstand me, but I fancy it is the other man who is leading him away."

Winston smiled somewhat grimly. "Your meaning is quite plain, and I am already looking forward to the encounter with my fellow-gambler. You believe that I will prove a match for him."

Maud Barrington, to her annoyance, felt the blood creep to her forehead, but she looked at the man steadily, noticing the quiet forcefulness beneath his somewhat caustic amusement.

"Yes," she said simply; "and I shall be grateful."

In another few minutes she was galloping across the prairie, and when she rejoined her aunt and Barrington, endeavored to draw the latter's opinion respecting Courthorne's venture, by a few discreet questions.

"Heaven knows where he was taught it, but there is no doubt that the man is an excellent farmer," he said. "It is a pity that he is also to all intents and purposes mad."

Miss Barrington glanced at her niece and both of them smiled, for the Colonel usually took for granted the insanity of anyone who questioned his opinions.

In the meanwhile Winston sat sway-

ing on the driving-seat, mechanically guiding the horses, and noticing how the prairie sod rolled away in black waves beneath the great plow. He heard the crackle of fibers beneath the triple shares, and the swish of greasy loam along the moldboard's side, but his thoughts were far away, and when he raised his head, he looked into the dim future beyond the long furrow that cut the skyline on the rise.

It was shadowy and uncertain, but one thing was clear to him, and that was that he could not stay at Silverdale. At first, he had almost hoped he might do this, for the good land and the means of efficiently working it had been a great temptation. That was before he reckoned on Maud Barrington's attractions, but of late he had seen what these were leading him to, and all that was good in him recoiled from an attempt to win her. Once he had dared to wonder whether it could be done, for his grim life had left him self-centered and bitter, but that mood had passed, and it was with disgust he looked back upon it. Now he knew that the sooner he left Silverdale the less difficult it would be to forget her, but he was still determined to vindicate himself by the work he did, and make her affairs secure. Then, with or without a confession, he would slip back into the obscurity he came from.

While he worked the soft wind-riot about him, and the harbingers of summer passed north in battalions overhead—crane, brant-geese, and mallard, in crescents, skeins, and wedges, after the fashion of their kind. Little long-tailed gophers worked across the whitened sod, and when the great plow rolled through the shadows of a bluff, jack rabbits, pied white and gray, scurried amidst the rustling leaves. Even the birches were fragrant in that vivifying air, and seemed to rejoice as all animate creatures did, but the man's face grew more somber as the day of toil wore on. Still, he did his work with the grim, unwavering diligence that had already carried him, dismayed but unyielding, through years of drought and harvest hail, and the stars shone down on the prairies when at last he loosed his second team.

Then, standing in the door of his lonely homestead, he glanced at the great shadowy granaries and barns, and clenched his hand as he saw what he could do if the things that had been forced upon him were rightfully his. He knew his own mettle, and that he could hold them if he would, but the pale, cold face of a woman rose up in judgment against him, and he also knew that because of the love of her, that was casting its toils about him, he must give them up.

Far back on the prairie a lonely coyote howled, and a faint wind, that was now like snow-cooled wine, brought the sighing of limitless grasses out of the silence. There was no cloud in the crystalline ether, and something in the vastness and stillness that spoke of infinity, brought a curious sense of peace to him. Impostor though he was, he would leave Silverdale better than he found it, and afterwards it would be of no great moment what became of him. Countless generations of toiling men had borne their petty sorrows before him, and gone back to the dust they sprang from, but still, in due succession, harvest followed seed-time, and the world whirled on. Then, remembering that, in the meanwhile, he had much to do which would commence with the sun on the morrow, he went back into the house and shook the fancies from him.

CHAPTER XIII.

Mastery Recognized.

HERE was, considering the latest price of wheat, a somewhat astonishing attendance in the long room of the hotel at the railroad settlement one Saturday evening. A big stove in the midst of it diffused a stuffy and almost unnecessary heat, gaudy nicked lamps an uncertain



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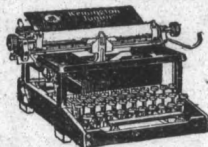
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brilliancy, and the place was filled with the drifting smoke of indifferent tobacco. Oleographs, barbaric in color and drawing, hung about the roughly-boarded walls, and any critical stranger would have found the saloon comfortless and tawdry.

It was, however, filled that night with bronzed-faced men who expected nothing better. Most of them wore jackets of soft black leather or embroidered deerskin, and the jean trousers and long boots of not a few apparently stood in need of repairing, though the sprinkling of more conventional apparel and paler faces showed that the storekeepers of the settlement had been drawn together, as well as the prairie farmers who had driven in to buy provisions or take up their mail. There was, however, but little laughter, and their voices were low, for boisterousness and assertion are not generally met with on the silent prairie. Indeed, the attitude of some of the men was mildly deprecatory, as though they felt that in assisting in what was going forward they were doing an unusual thing. Still, the eyes of all were turned towards the table where a man, who differed widely in appearance from most of them, dealt out the cards.

He wore city clothes, and a white shirt with a fine diamond in the front of it, while there was a keen intentness behind the half-ironical smile in his somewhat colorless face. The whiteness of his long nervous fingers and the quickness of his gestures would also have stamped him as a being of different order from the slowly-spoken prairie farmers, while the slenderness of the little pile of coins in front of him testified that his endeavors to tempt them to speculation on games of chance had met with no very marked success as yet. Gambling for stakes of moment is not a popular amusement in that country where the soil demands his best from every man in return for the scanty dollars it yields him, but the gamster had chosen his time well, and the men who had borne the dreary solitude of winter in outlying farms, and now only saw another adverse season opening before them, were for once in the mood to clutch at any excitement that would relieve the monotony of their toilsome lives.

A few were betting small sums with an apparent lack of interest which did not in the least deceive the dealer, and when he handed a few dollars out he laughed a little as he turned to the bar keeper.

"Set them up again. I want a drink to pass the time," he said. "I'll play you at anything you like to put a name to, boys, if this game don't suit you, but you'll have to give me the chance of making my hotel bill. In my country I've seen folks livelier at a funeral."

The glasses were handed around, but when the gambler reached out towards the silver at his side, a big, bronze-skinned rancher stopped him.

"No," he drawled. "We're not sticking you for a locomotive tank, and this comes out of my treasury. I'll call you three dollars, and take my chances on the draw."

"Well," said the dealer, "that's a little more encouraging. Anybody wanting to make it better?"

A young lad in elaborately-embroidered deerskin with a flushed face leaned upon the table. "Show you how we play cards in the old country," he said. "I'll make it thirty—for a beginning."

There was a momentary silence, for the lad had staked heavily and lost of late, but one or two more bets were made. Then the cards were turned up, and the lad smiled fatuously as he took up his winnings.

"Now I'll let you see," he said. "This time we'll make it fifty."

He won twice more in succession, and the men closed in about the table, while, for the dealer knew when to

strike, the glasses went around again, and in the growing interest nobody quite noticed who paid for the refreshment. Then, while the dollars began to trickle in, the lad flung a bill for a hundred down.

"Go on," he said, a trifle huskily. "Tonight you can't beat me!"

Once more he won, and just then two men came quietly into the room. One of them signed to the hotel keeper.

"What's going on? The boys seem kind of keen," he said.

The other man laughed a little. "Ferris has struck a streak of luck, but I wouldn't be very sorry if you got him away, Mr. Courthorne. He has had as much as he can carry already, and I don't want anybody broke up in my house. The boys can look out for themselves, but the Silverdale kid has been losing a good deal lately, and he doesn't know when to stop."

Winston glanced at his companion, who nodded. "The young fool!" he said.

They crossed towards the table in time to see the lad take up his winnings again, and Winston laid his hand quietly upon his shoulder.

"Come along and have a drink while you give the rest a show," he said. "You seem to have done tolerably well, and it's usually wise to stop while the chances are going with you."

The lad turned and stared at him with languid insolence in his half-closed eyes, and, though he came of a lineage that had been famous in the old country, there was nothing very prepossessing in his appearance. His mouth was loose, his face weak in spite of its inherited pride, and there was little need to tell either of the men, who noticed his nervous fingers and muddiness of skin, that he was one who, in the strenuous early days would have worn the wooly crown.

(Continued next week.)

THE OLD BARN DANCE.

BY CHARLES H. MEIERS.

When the husking days are over,
Pleasure comes to have its run;
Then each country lass and lover
Sets about to have some fun.
When the old folks sit serenely
By the fireplace, then, perchance,
Gallant swains and maidens queenly
Seek the old barn dance.

Country roads, from four directions,
Bear their loads of happy folks—
Girls with glowing, rich complexions,
Boys with words of love, and jokes;
And the moonlight shows bright faces,
Yes, and many a wistful glance,
As the folks from various places
Seek the old barn dance.

When the sweet strains of the fiddles
Bring the dancers on the floor,
Girls begin to solve the riddles
That have troubled them before;
For, to note each young man's action
As the evening joys advance,
Doubtful girls, for satisfaction,
Seek the old barn dance.

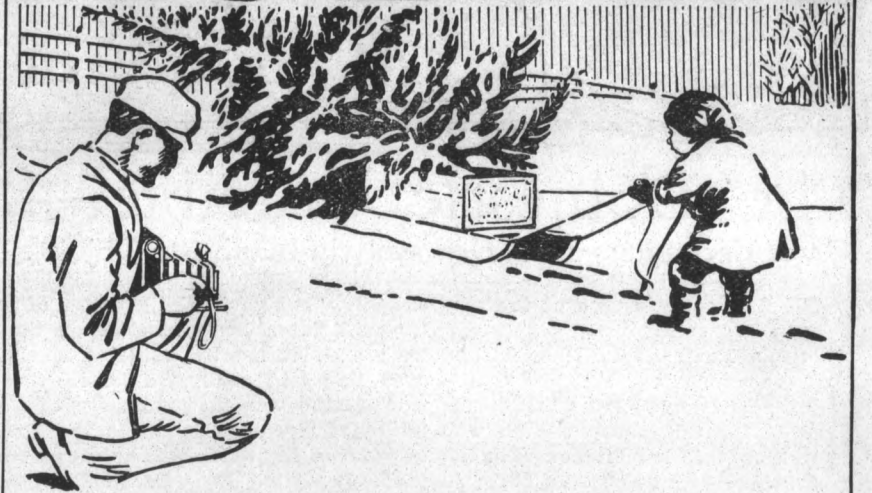
Happy hearts lift feet that cater
To the music's lilt and swing,
While each favored swain feels greater
Than a president, or king.
Folks who wish to find real pleasure,
When oppressed by circumstance—
Those who crave joy in full measure—
Seek the old barn dance!

HOLIDAY STORIES.

Every Michigan Farmer reader can feel assured of having a supply of high class fiction for the coming holidays. Besides the regular installments of our serial, "Winston of the Prairie," we have arranged for one of the best Xmas stories you have read in years, entitled, "Santa Claus and Little Billee," by that well-known magazine writer, John Kendrick Bangs. Edgar White has sold us one of the best pieces of fiction that has come from his pen, "No. 2908's Christmas Run," and Miss Bird's "Holiday Week in Prussia," is of peculiar interest just now because of the present European war.

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The Domestic Crucible—4.

Grace Encounters Total Depravity in Inanimate Objects.

THE first strawberries of the season, my dear."

Grace Ludlow raised her flushed face from an anxious scrutiny of the bread she had pulled out of the oven, to survey the tall, spare woman who was walking into her kitchen with the air of being quite at home. Then, as the newcomer added,

"I thought they might be an apology for not having called sooner," Grace shoved the bread back into the fiery oven, slammed the door a bit harder than necessary, and advanced to meet her caller.

"How beautiful, and delicious, too, I'm sure," she said as she took the dish. "You must be Mrs. Smedley who was so kind to John when he lived alone."

"Yes, though I haven't heard myself called that for so long I'd forgotten it was my name," said Mrs. Smedley, pulling off her broad-brimmed hat and fanning herself as she spoke. "I've been Aunt Ann now for 40 years to everyone in the neighborhood from one year up to 100 years old, so you might as well begin."

"I'll be only too glad to, if I may," laughed Grace, pulling forward a chair as she spoke. "Just sit right down here by the window, I've got to keep right at it if dinner is on time. I'll put these berries in the cellar and be right up."

In the cellar a bottle of moldy grape juice caught her eye, and as she stopped to get it, she discovered that the basin of milk she had put away in the morning had silently stolen away through a tiny hole in the dish. She stopped to wipe up the milk, and as she reached the kitchen an odor of scorching bread greeted her nostrils. Mrs. Smedley had just reached the oven as Grace entered the room.

"I'm afraid your bread is burning," she said, "I was just going to look at it."

"Oh, I suppose it is," said Grace, savagely jerking open the door and burning her knuckles in the process. "It's done everything else provoking ever since it was born, so it might as well finish by burning itself to death. I dropped the can of starter last night and had to send down to the corners for yeast cakes. Then it got a chill in the night and I set it on the stove in a pan of warm water to recover. John started up a roaring fire and scalded the sponge. I mixed it too stiff, the stuff wouldn't raise this morning, the hired man knocked a loaf off the table onto Carlo's back, and now, of course, it's burned crisp."

Aunt Smedley greeted the outburst with an appreciative chuckle.

"I see you've met them already, those housekeeper's 'days,'" she said. "Well, my dear, you might as well decide right now to laugh when they come instead of crying or storming around. They come to all of us, the days when we'd swear inanimate things were included in the curse, they act so totally depraved, so you might as well expect them."

"Oh, I expect them all right," said Grace, glaring at the wreck of her bread; "but please don't ask me to laugh when they come. It's too much to ask of female frailty."

"You think so just now," said Ann

cheerily, "but you'll think better of it if you'll put a little vaseline on that burn and let me tie a bit of muslin over it. And really," as she deftly wound the muslin around Grace's burned fingers, "a laugh is the best way out of it. Some women cry, some mope, some tell their husbands, some just clear out and wait for a better day, while others get mad and throw things. If you can't laugh, at least don't tell your husband, try some of the other ways of relief."

"Honest, now, could you laugh it off at first?" asked Grace. "I'd like to take that stuff right this minute and pitch it through the window, and you ask me to treat it as a joke."

"That was my way, too," confessed Ann, "until I learned that every outburst of temper upset my digestion and gave me a headache besides giving my husband a fine excuse to hitch up and drive to town and leave me home alone. So I decided it didn't pay. It isn't going to kill anyone if that bread isn't good. But it's going to put fretful lines around your mouth

and a twist in your sunny self if you get fussed up over it. The really important thing is not how the bread acts, but how you act."

"I suppose you are right," said Grace meekly, "but can't I just throw things this once? You can't imagine how it would relieve me."

"Wouldn't it relieve you just as much to take that stuff out and throw it at the pigs, as to throw it through the window?" laughed Ann. "If it would, do so by all means, and save yourselves an attack of indigestion. Then come in and make a strawberry shortcake for dinner and start fresh bread tomorrow."

"So my bread is only fit for the pigs," said Grace whimsically. "Well, I'd rather you'd say that than John, so here goes. And won't you stay and help eat the shortcake?"

"With 20 quarts of strawberries on the vines waiting to be picked?" said Ann. "Wait till the rush is over and you haven't had a 'day.' Then I'll be glad to come."

And smiling kindly she left Grace tipping the bread out of the pans, the lines of temper gone from between her eyes and a smile kinking the corners of her lips.

DEBORAH.

Michigan's Happy Babies—No. 5.

By DEBORAH.

AFTER having decided upon the formula to be used in feeding the baby, the mother's next care is to decide upon how often baby shall be fed and how much milk he shall have at a feeding. For if she is to have a healthy baby, free from digestive disturbances, she must observe regularity in the time of feeding and in the amount given the child. No adult can be healthy and be constantly eating, or eating at irregular hours, and babies are even more susceptible to irregularity in feeding. Most mothers understand this, and the habit, once so prevalent, of feeding baby every time he cries, is fortunately dying out. Fewer mothers understand, however, that the time he is allowed to take in draining his bottle should be watched also. It is a common habit with busy mothers to prop the bottle up by means of a pillow or folded cloth and let the baby lie in his basket, taking all the time he wants to eat, dozing and waking up to eat a little, then dozing again until often the bottle is not finished by the next feeding time. Mealtime should be as much a business with baby as with his parents. He should be taken up and held in the arms while he eats, and given not more than ten minutes to take his feed. This is better for him, not only from the standpoint of digestion but because it gives him a change of position. Not the least of its benefits is the frequent short rests it gives the mother.

In the time of feeding and the quantity each baby must be a law until itself, as much as in the formula used. Some babies thrive best on small quantities fed often, while others do best on a larger feed at longer intervals apart. In cases of extreme malnutrition it is often necessary to feed a child three months old a tablespoonful every hour, where the healthy child that age would be taking four ounces every three hours. If the baby

does not thrive as you think he should try altering the size of the feeding before you change the formula. Perhaps you are not giving him enough at a time to satisfy his hunger. If he seems uncomfortable after his bottle, reduce the size of the feeding and give him the bottle 10 or 15 minutes earlier than you have been doing.

The table given below is the one used by Dr. Charles Douglas. Like all tables and formulas printed for children, it is only general. Your child may thrive if you follow it exactly. If he does not, alter it as your judgment tells you is best. Small babies will require less food than this table gives, while large babies will probably demand more. You will notice that the night feeding is larger than the day. The table is prepared for babies of average size, that is, those who weigh about seven and one-half pounds at birth and gain a half pound a week after the first month.

For the first week, that is, after the third day, when you first begin to feed, the baby will require from 10 to 15 ounces of food, given in 10 feedings one and one-half hours apart, with two feedings from 10 p. m. to 7 a. m. The day feeding should be an ounce or an ounce and one-fourth and the night feeding an ounce and one-fourth or an ounce and one-half.

During the second, third and fourth weeks the number of feedings, intervals between and number of night feedings remains the same. The size of the feeding increases to one and one-half or two ounces in the day and two to three ounces at night, the whole day's feeding being 15 to 30 ounces. Up to the sixth week the feedings are but nine in the 24 hours at intervals of two hours with one feeding between 10 p. m. and 7 a. m. The size of the day feeding increases to two or two and one-half ounces, and the night is three or three and one-half ounces. The whole day's food

supply is from 22 to 32 ounces.

To three months old there are eight feedings in 24 hours, two and one-half hours apart, with one night feeding. The size of the day feeding is three to three and one-half ounces and the night is four to four and one-half. The quantity for the 24 hours is 24 to 36 ounces.

Up to the sixth month there are seven feedings, three hours apart, with one night feeding. The day feeding is four to four and one-half ounces and the night five to five and one-half. The quantity for 24 hours is 28 to 38 ounces.

From six to nine months there are six feedings, all in the day, the night feeding, or the one between 10 p. m. and 6 a. m., being omitted entirely after six months. Give four and one-half to five ounces during the day and from six to seven ounces at your bedtime, which is here supposed to be 10 p. m. The quantity for the day is from 33 to 42 ounces.

From nine months to a year old feed five times a day, every three and one-half hours, with a feeding at bed time. The day-time feedings are five and one-half to six and one-half ounces and the bed-time feeding seven to eight ounces. The day's quantity is from 37 to 45 ounces.

These quantities, as has been said, are merely general. Perhaps your baby can take more successfully. I have known healthy nine-months babies to take eight ounces at every feeding during the day, where this table suggests but six or seven. In everything you must be guided by the baby's health and his weight. If he vomits immediately after eating you are giving him too much and should reduce the size of the feeding. If he cries and sucks his fingers he is probably hungry and should have more. He should be weighed at least every second day. If his weight remains stationary he is not getting enough food. If he loses weight it is probable that the formula is not right. If he shows a steady increase and is happy, everything is all right.

HOME QUERIES.

Household Editor:—Can you tell me what ails my baby? She is six weeks old and I have been giving her a baby food with milk. She has colic and raises a lot of gas. She cries a good deal and is not gaining in weight.—Mrs. B.

It is probable that she is not digesting the baby food, as infants so young as that can seldom digest starch. I would suggest that you drop the baby food and give her simply modified milk. Start her with two ounces of lime water, and one ounce of milk sugar, with enough boiled water added to make the quantity 22 ounces. If she continues to have colic but does not vomit, reduce the skim-milk and increase the cream. If she vomits sour food about an hour after eating, decrease the cream and increase the skim-milk unless she is gassy.

Household Editor:—My baby is six months old and I have nursed her entirely, but she does not seem satisfied. She is not sick but acts hungry. Some of my friends advise me to feed her at the table. Would you advise this?—M. L.

I think it would be better not to feed her any starch for at least another month. Instead give her a little milk immediately before each nursing. For this you can use the milk

from the table, starting with a tablespoonful each time and increasing the quantity if she still acts hungry. Taken with the mother's milk the cow's milk will not need to be modified or sterilized.

QUAINT JABOT IN CROCHET.

BY MAE Y. MAHAFFY.

Lavender in a mercerized cotton was chosen for a quaint, easily made jabot, one of the five cent spools being sufficient. D. M. C. will make a somewhat richer, and consequently more expensive jabot, but any of the soft cottons will answer.

Make the center first by chaining eight stitches and joining. Double crochet 12 times into this circle, making 1 ch between each time. For the next row dc over each previous ch st. making 3 ch between.

We are now ready to start the spirals. Ch 36, turn, and make a single crochet into next to last ch st. Dc 120 times over the long chain, or as many times as possible by crowding, and dc into the last row of the center between two of the dc sts. Coil the spiral with the fingers if it has not coiled evenly during the making. Ch 3, and dc into next space in circle, and proceed with the next spiral. Continue thus until 11 spirals are made, thus leaving a short space on one side of the circle. This spaced side is then folded back of the filled portion, causing the spirals to hang two deep, the doubled circular portion being utilized for a brooch with which to fasten the jabot to the waist.

SHORT CUTS TO HOUSEKEEPING.

Nice and inexpensive garment hangers can be made of barrel hoops. One hoop can make two large ones or three small ones. Five cents worth of screw hooks will make 12 hangers. Thus, you see, the cost is small. Pad the hangers, using sachet in the padding, cover with flowered cretonne, or silk scraps.—S. P. V.

Old-fashioned Butter Scotch.

One cup of granulated sugar, one-quarter cup of molasses, one-half cup of butter, two tablespoons of hot water, one tablespoon of vinegar. Boil until it forms a crisp ball in cold water, then pour on a buttered tin and mark in squares before cold.

A way to keep the guest-room sofa pillows always immaculate besides lending an extra touch of daintiness to a room that is much in use, is to make squares of lawn or linen the size of the pillows, hem them and edge them with lace if of lawn, button-hole stitch them in small scallops, if of linen, and at the four corners sew narrow linen tape or wash ribbon, long enough to tie when the squares are placed cornerwise on the sofa pillows. Have two sets of each material for each pillow, so that they can be changed and freshened at a minute's notice. These covers are more easily made, adjusted and laundered than any kind of a slip. Moreover they are far more decorative, as they permit the colored corners of the pillow still to show. To those who have used them they have been a source of great satisfaction. Large linen handkerchiefs already hemstitched might, of course, be used without other trimming, and those of good quality China silk would wear indefinitely.—M. S.

THE YOUNG MOTHER.

The busy young mother should not become discouraged because there are so very many demands upon her time. Let her determine to take each day as it comes, giving first attention to the more important duties and striving, through systematic management, to cover as much ground as possible with a minimum amount of labor. Let her stick to plain food, well cooked, plain clothing, of as good quality as she

can afford, keep her house as clean as is consistent with her time and strength, and rest content. Let her not forget that it is as much her duty to devote a portion of the day to rest as it is to work. That to do this is to enable her to accomplish more than she otherwise could do and that a certain amount of recreation is also a necessity in order to keep herself from growing old before her time. No woman, unassisted, can do everything, but any woman possessing good health and the faculty of turning off work can do the necessary work of a home and still have some time to herself.

California. ELLA E. ROCKWOOD.

HOME QUERIES.

Household Editor:—I am a reader of the Michigan Farmer, and enjoy reading the many household recipes. I would like to ask Mrs. F. H. for her red catsup recipe, like you buy in the stores. I am enclosing a recipe for a relish which I like.—Mrs. M. C.

Two dozen ears of corn, 2 heads of cabbage, six red and six green man-

goes, four tablespoons of white mustard seed, two tablespoons mustard, two tablespoons celery seed, two quarts of vinegar, four pounds brown sugar, four tablespoons salt; boil for twenty minutes.

Household Editor:—I wish some of the women who take the Michigan Farmer would send a recipe for making apple butter without boiling the sweet cider down first. Also some recipes for using green tomatoes, such as mustard pickles.—Mrs. J. W. B.

I can but think that the world would be better and brighter if our teachers would dwell on the duty of happiness as well as on the happiness of duty; for we ought to be as bright and genial as we can, if only because to be cheerful ourselves is a most effectual contribution to the happiness of others.—Sir John Lubbock.

I find the gayest castles in the air that were ever piled far better for comfort and for use than the dungeons in the air that are daily dug and caverned out by grumbling, discontented people.—Emerson.

Prize Baby Contest.

ARE you proud of your baby? The editor of this department believes that Michigan has as much right to be proud of her babies as of her apples and automobiles.

If you are proud of yours, tell us about it. Enter your baby in our contest for the most nearly perfect baby. All that is necessary is to fill out the blank below and mail it to the Baby Contest Editor. If you have a good picture of the baby, send it along. Awards will be announced in the issue of January 23. Ten prizes will be awarded in this contest as follows:

A cash prize of Five Dollars will be given the baby most nearly approaching the standard of perfection; Three Dollars to the second; Two Dollars to the third, and a child's silver set to each of the next seven. Honor mention will be given all others who have high scores. The age limit is one year. The contest is open only to subscribers to the Michigan Farmer.

Fill in carefully the following blank and mail it to the Baby Contest Editor by January 1, 1915. If anything is not quite clear to you, write and ask for explanations.

Parents' name and address.....

.....

.....

.....

.....

Baby's name

Exact age in months and days.....

.....

.....

Sex

Weight at birth.....

Length at birth.....

Weight today

Length today

Condition at birth:

Normal

Delicate

Breast fed

Bottle fed

What foods?

How fed now.....

Length of arm, shoulder to tip of middle finger

Length of leg, hip joint to sole of foot

Circumference of head above the eyes

.....

.....

.....

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Circumference of chest at line of nipples

Circumference of abdomen at line of navel

Muscular development:

1—Does he hold objects?.....

2—Hold head erect?.....

3—Sit up alone?.....

4—Stand by chairs or wall?.....

5—Stand alone?

6—Creep?

7—Walk....Alone....With help....

Flesh:

Firm

Flabby

Teeth:

Number

Single

Double.....

Condition

Hearing:

Dull

Acute

Eyes:

Normal

Defective

Breathing:

Mouth

Nose

Mouth:

Habitually open..... Closed.....

Color of gums and tongue.....

Diseases:

Hereditary

Contagious

Children's

Nerves:

Quiet

Restless

Disposition:

Cries a good deal.....

Good-natured

Digestion

Remarks:

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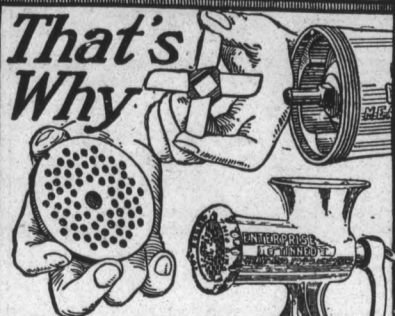
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We are prepared to do all kinds of Fur Tanning: Cattle or Horsehides, calf, dog, deer or any kind of wild or domestic animals: dye and finish them. We can make them into Coats, Robes, or Rugs. If desired furnishing all trimmings and linings. We solicit your business and are well equipped to do a good job. BROWN & SEHLER CO., Grand Rapids, Michigan.

"Blues" Another Word for Selfishness.

YOU'VE all had blue days, that goes without saying. Days when you were sure that no one on earth had such a hard lot as yours, when you knew you were friendless, and could see yourself homeless and penniless in the very near future. Days when, in the words of Mr. Mantalini, you felt that everything had "gone to the demition bow-wow," and you might as well follow them and have done with it.

And when you have been in the very darkest spot of that blue day did you ever have some well-meaning friend come along and tell you just to think how many people were worse off than you were? And when they relieved themselves of that inane, time-worn, beastly selfish remark, did you feel a bit better? Rather did you not feel like smiting them hip and thigh and go on being bluer than ever?

It always seemed to me that for pure selfishness that way of making oneself satisfied beats all others. Why, if I am unhappy and wretched, should I feel better just to think that someone else is worse off than I am? If I want one of the new "Made in America" velvet suits and can't have anything better than serge, am I not a selfish beast to comfort myself by thinking that lots of other women can't have the serge? If I have a felon on my finger does it make it hurt any the less to reflect that somebody else has a cancer?

If a thing is bad for me, it is bad and that's the end of it. The war has hurt the business prospects of practically everyone in America. Everyone has felt its effects directly or indirectly. Does it alter matters for us to think how much better off we are than the starving Belgians? It may make us thankful in a smug, selfish sort of way, but it is a thankfulness that we should be ashamed of.

Now this is not an apology for the blues, there is no apology for letting oneself get into such an abject state of self-pity that one needs to be comforted. The blues themselves are but an expression of selfishness. We let our minds dwell on what we want and can't have, or upon conditions we do not like but can not change until we exclude every thought that is sane and good. Instead of doing for others, we sit around complaining inside because others do not do enough for us. We sigh for the flesh pots of Egypt, perhaps. Perhaps only for time to do the work we imagine we are peculiarly fitted for, instead of the work which has been laid right at our door. Whatever the cause of our blues they are unlovely and inexcusable, and it is but "meet, right and our bounden duty" to overcome them.

But not by comparing ourselves with others. No matter what the other fellow does or is or has, he is no standard of measurement for us, nor is his condition to make us either happy or unhappy. Each individual is a law unto himself, and must control himself from within. When you have the blues, then, do not begin to look about for someone worse off than yourself, in comparison with whom you may count yourself happy. Ask yourself what right you have to make others unhappy by moping; what you have ever done to deserve the ease and happiness you crave; how much you have done to make life happier for someone else, and what there is at this particular moment that you can do to help your next door neighbor. Then get busy.

The busy person is seldom blue, he hasn't time to be. And the person who is busy helping someone else is never in the dumps. If, instead of complaining because the world doesn't do enough for us we got out and did something to justify our being here,

we would soon have done with the blues altogether.

DEBORAH.

ESSENTIALS IN HOUSEWORK.

BY ELLA E. ROCKWOOD.

Busy housemothers realize that some duties must be neglected, either wholly or in part, with the arrival of each succeeding day. Rarely is there time enough for everything. Which of the number are most essential, and which shall be given second consideration are questions which obviously must be left for personal decision.

In view of the fact that proper diet, especially in the case of growing children is so important an item in regard to health it would appear that food should receive first attention. This, of course, does not imply that it must be either elaborate or expensive unless it can be urged that all food is expensive at the present. Certain it is that plain and wholesome food, besides claiming the advantage in cost over the higher priced product, possesses superior nutrient properties outranking the other in actual value. So that, in this instance, economy and efficiency go hand in hand.

If mothers but realized how much better are the plain foods for their children, and for adults as well, there would be less attention paid to rich and indigestible dishes, even on the tables of those who can afford them. Careful consideration of this subject has been urged by physicians and dieticians of late years and young children are being fed far differently from what they were a generation ago. Other potent forces in this direction are the household and mothers' magazines which, as a rule, give reliable advice to the inexperienced. Plain bread, pure milk, fresh fruits, vegetables and eggs provide largely the nutrients essential to healthful growth and maintenance. Rich pastries, highly seasoned dishes of all sorts, excess of sweets and fats, are not only unnecessary but absolutely deleterious in their effects, particularly upon children.

Decided that proper food for the family ranks first in importance, cleanliness plainly comes next. Indeed, conditions might be imagined where it would even take precedence. Moderation in all things is a worthy motto. So in cleanliness, which is akin to godliness, there are occasionally found extremes in which few women are warranted. Some there are so obsessed by this virtue that their families are rendered miserable thereby. The middle course as followed in the vast majority of homes, is intended to maintain an equilibrium. To spend a lifetime in the never ending struggle to preserve spotless one's home from attic to cellar is a thankless task even if it can be accomplished. In these vacuum cleaned days, however, it comes nearer to the limit of endurance than when soap, sand and elbow grease were the agents mainly employed for the purpose.

Some misguided mothers there are who spend long hours each week over the ironing table. Repeatedly they have been told how foolish a practice it is to put ruffles and tucks into the making of children's clothes, yet many mothers are still doing altogether too much of it. These no-starch days help somewhat, yet, elaborately trimmed wearing apparel still holds its devotees many hours weekly in a tiresome task.

Let us render thanks that the yard-long skirts for infants have been abandoned in favor of shorter ones and that fashion which makes slaves of us all has for the past few years smiled upon fewer and plainer petticoats for femininity generally, even though it can be charged that in avoiding one extreme we have adop-

ted another. If only all mothers would declare for plain food and plain clothing what a world of work they would save themselves, to say nothing of any further advantage gained by so doing.

There is no doubt that a well equipped home, supplied with modern conveniences, makes easier the work of those who care for it. Hence it is plainly the duty of every husband to provide as many of these as possible. The number of farm homes boasting of modern improvements is rapidly increasing. Time was when farm improvements were confined largely to big red barns. This, however, is not the rule today. Few men care to invite criticism by holding a monopoly in this direction, while a deserving wife gets little or no share in the modernizing equipment. Affection for his family leads the average man to want them well provided for. And besides this he takes a certain pride in supplying labor-saving appliances in his home as fast as he is able to do so.

To revert to the subject of sewing, it is often a decided economy to buy ready-to-wear garments for adults and children alike. By watching the sales if near to a large town, or through the mail order houses, clothing of all kinds can be bought actually for the price of the material, or even less. Of course, the material may not be of the finest and the making may not bear very close inspection. However, anyone not blessed with plenty of time is fully justified in letting the other woman, hired by the factory, do her sewing. Even though the latter may get better than nothing, very likely she is glad to get it to do.

FASHIONS BY MAY MANTON.

Our large Fashion Book, containing illustrations of over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of ten cents.



No. 7511—Square Yoke Night Gown. With high or low neck, with long, short or three-quarter sleeves. Sizes 34 to 46 bust.

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No. 8043—Child's One-piece Night Gown. With high or low neck, long or short sleeves, with or without opening at front. Sizes, 2, 4 and 6 years.

The above patterns will be mailed to any address by the fashion department of the Michigan Farmer on receipt of ten cents for each.

THIS YEAR'S BARGAIN OFFER.

The Michigan Farmer three years for \$1, or five years for \$1.50. See page 518.

Farm Commerce.

A Bean Growers' Association.

THE farm market conference at Saginaw had its initiative in a letter addressed by the editor of the Michigan Farmer to the writer. Mr. Robinson, of the Saginaw County Farm Bureau, responded to a suggestion in the article in answer to Mr. Waterbury's letter as published in the Michigan Farmer. Ex-Senator A. B. Cook called over the telephone, saying the time was ripe. The heads of the several farm organizations of the state, and farm management leaders and experts joined in the call for the conference.

The meeting held at Saginaw was well attended, in fact the hall was crowded. President Welch, of the State Bean Jobbers' Association, said that the elevator men as a whole desired a merchandising proposition to a speculative one. If the farmers were to organize and assist in making the price and maintaining it by conserving marketing, bean growing would be more profitable, mutually. Of the estimated crop of five million bushels this year, in practically 60 days after harvesting, one-half of the crop is out of the farmers' hands. A sane deduction made concerning the marketing of beans was that with the market starting on a \$1.75 basis and now being at \$2.25 per bushel, that the market started too low, and these figures would show a loss of over one million dollars to the growers.

Some objections were voiced against the grower of beans working with the elevator men, yet it was apparent that any other plans were too remote to deserve present consideration. Advocates of co-operative enterprises have not always seen that co-operation was a means to an end, rather than the end itself. The building of additional elevators, where existing facilities are sufficient is, in the world of economics, as indefensible as the present European warfare. The proposed organization of bean growers would be in position to determine unfair practices in dealing and co-operate where fair dealing was practiced.

Competent agricultural advisers conservatively estimate that the bean crop would bring the grower 20 per cent more if well marketed through organization. Proper seed selection might also add another one-fifth to the crop. While no positive plans were adopted, the general idea was that the directors of the bean growers association would, after due consideration of market conditions based on quality and quantity and other factors, arrive at the basic price for beans to start with. This price being agreed to by the Bean Jobbers' Association would be then quoted by them to the trade. There would be an advance of say five or ten cents per bushel each month for a stated period, to cover insurance, shrinkage and carrying charges. If there were conditions that indicated a weakening of the market, growers would be advised to assist in maintaining the market by withholding deliveries. There would also be arrangements for warehouse receipts and financial assistance under the new regional bank act.

By some of the best financial managers in Michigan, this plan is declared workable, and equitable. One of the interesting bits of information brought out at the meeting was the fact that in the interior portions of the United States beans retail at 10 cents per pound to the consumer, regardless of the price paid the grower.

There is still hope that the bureau of markets will detail a man from

Washington to assist in the county organizations. The chairman has named as two members of the committee to assist in completing plans for the organization, A. B. Cook, of Owosso, and Amos Welch, of Ionia. The Saginaw county organization will name a member and it is desired that some bean grower from the Thumb section of Michigan be named to complete the committee.

One day after the Saginaw meeting there was received advices from C. E. Bassett, specialist in co-operation for the Department of Agriculture at Washington. Mr. Bassett gave this matter some attention last summer, and his report is based on his observations here. Mr. Brand, chief of the Division of Markets, said it was the first case on record where the growers and distributors of a crop were harmoniously working together to solve a market problem.

To the general public as well as bean growers it may be of interest to know that Michigan raises 70 per cent of the white bean crop of the United States and also that the Michigan Bean Jobbers' Association is one of the strongest produce organizations in the United States.

The tentative plans for organization as outlined by the Department of Agriculture, are appended, for the general information of those interested. Shiawassee Co. J. N. McBRIDE.

A Michigan Bean Association.

Michigan growers and jobbers of beans realize that they are now facing questions, relating to production and marketing, which they are unable to successfully solve, acting in their individual capacities. Several meetings of prominent growers and dealers have been held to try to improve conditions, and the following plan of action has been agreed upon as being the most promising:

The organization of a Michigan Bean Association, made up of county or district bodies, one representative from each county or district making up a board of control of the association.

Objects.

- (a) To secure better seed by selection, breeding, etc.
- (b) To study and combat diseases by field demonstrations, etc.
- (c) To arrange for the financing of the growers, through a system of loans on warehouse receipts, so as to avoid the need of dumping their beans on the market faster than the demand will warrant.
- (d) To carry on a campaign of education, by advertising, distribution of cook books, cooking demonstrations, etc., to promote the more general use of beans as human food.
- (e) To secure and disseminate among the growers timely and reliable information as to bean crop and market conditions and to fix a fair price, below which the growers would be advised not to sell; said price to be based upon cost of production, size of available crop and general market conditions.
- (f) To agree upon a standard of grades and to assist, by inspection, in protecting the reputation of these grades.
- (g) To assist the growers in arranging for reliable selling agencies, so as to eliminate, as far as possible, the speculative feature from the market, to the advantage of both the grower and consumer.
- (h) To assist in securing a proper distribution of the beans, so that all

consuming centers be fairly supplied at all times and that gluts be avoided.

(i) To assist in securing better transportation facilities, the settlement of claims, etc.

Expense of Management.

The association should have a permanent office. Necessary funds for carrying on this work would be raised by membership fees and a tax of a small fraction of a cent per bushel, collected at time of sale for "marketing maintenance."

Method of Organization.

(Suggested).

Articles of agreement and a form of organization should be drawn up by a committee made up of representatives of the various farm organizations, State Board of Agriculture, Agricultural College, Farm Management, the farm press and representative growers. These forms should be printed and sent to all leaders—county farm agents, institute lecturers and officers, the state press, etc. The active support of these agencies should be secured to obtain the membership of all bean growers and the collection of the annual membership fee, which will furnish the necessary finances for organization.

As soon as any county has enough members, let them meet and select county officers and a member of the State Board of Control. This board can then meet and select the officers of the State Association and adopt such rules for the management as may seem desirable.

Organization Agreement.

We, the undersigned Michigan growers of beans, do hereby associate ourselves, by the payment of an annual membership fee of (\$.....) for the purpose of organizing a Michigan Bean Growers' Association. The objects shall be to improve methods of production, grading, inspection, distribution and marketing, the financing of the growers, increasing the consumption of beans and the securing of crop and market information, on which to base a fair selling price. Each bean growing county shall have a local organization and each organized county shall be entitled to a member on the Board of Control of the State Association. We also agree to abide by the rules adopted by said Board of Control, reserving to ourselves the rights of the initiative, referendum and recall regarding all association matters.

RURAL CREDIT CONFERENCE.

When the leaders of Congress were requested last summer to put off further consideration of the rural credit subject until the next session of Congress, the promise was made that before they met again there would be called a conference of progressive farmers and others interested in agriculture from different sections of the country, at which the several plans for rural credit would be discussed, in the hope that some definite propositions might be made by the farmers themselves as to what they wanted in rural credit banks. This conference was called at the National Hotel at Washington, November 23-24. The work was conducted on the order of round-table discussions or open parliaments where each bill upon the subject, after having been explained by an expert, would be examined by the conference as to its relation to the needs of different sections of the country.

Among those who attended the sessions and participated in the discussions, were C. B. Kegley, Washington, Chairman of the Conference; United States Senator Norris, of Nebraska, who presented the proposition for direct loans by the government through the Postal Savings Department; Herbert Quick, West Virginia, who opened the discussion of the Landschaften System, and chairman of the resolutions committee; C. E. Spence, Master of Oregon State Grange; Capt. Smith,

of Iowa; Mr. Hobbs, North Carolina, member of Farmers' Union; H. Harland, Master Idaho State Grange; Congressman Bulkley, who explained the bill called the Hollis-Bulkley bill; J. D. Ream, Master Nebraska State Grange; William T. Creasy, Master Pennsylvania State Grange; United States Senator Fletcher, of Florida, who presented the Fletcher-Moss bill; Mr. Kerr, of the U. S. Department of Agriculture; Mr. Vancourtland, of New York, member of European Commission, who gave an account of the rural credit bank of New York state, just established; Western Starr, of Maryland; J. G. McSparran, Commissioner to Europe from Pennsylvania, who explained difference in condition and attitude between the American and European farmers; Mr. Polk, of Philadelphia; Mr. Phillips, of South Dakota; Dr. C. J. Owens, Commissioner to Europe; Mr. Milliken, of Virginia, who presented the Milliken plan for Personal Rural Credits, and Geo. P. Hampton, of New York, who made in a very complete way, the preliminary arrangements for the conference.

When the conference opened it seemed as though it would be impossible to harmonize the wide difference of opinion that was held by those present; but so complete and plain were the explanations of the different plans, and so frank and full were the discussions that the resolutions committee was able to draft a report containing what they thought was the best ideas in all the plans. The report was signed by all the members of the committee (except Mr. Hobbs, North Carolina, who dissented in a minority report in favor of direct loans by the government). The report was adopted as follows:

Resolutions.

1. That it is the judgment of this conference that some effective system of Land Mortgage Credits is necessary in order to place agriculture upon a level with other forms of industry, and that federal legislation is essential to the establishment of this result; we also believe that effective state legislation along the same lines is possible.
2. We approve the general principle of rural credits, based on farm mortgages.
3. We are opposed to the principle of direct loans by the government.
4. We approve the widest possible field of operations as furnishing the largest sources of credit, the widest market for bonds based on mortgage loans, and as tending to lower the rates of interest on such loans. We, therefore, favor the regional program of selling agencies as opposed to the system of local marketing of bonds.
5. We approve the provision of Section 30 of the so-called Bulkley Bill, providing for purchase of bonds by the government.
6. We do not approve the proposition that land banks may receive deposits for commercial uses.
7. Believing that rural credit land banks should be controlled in the interest of the borrower rather than of the lender, we recommend that the co-operative principle be preserved in the organization and administration of such banks.
8. We call attention to the value of a uniform system of registering land titles in all the states as a condition favorable to the successful development of a land mortgage system of rural credits and recommend this proposition to the several states.
9. We believe the need for a more effective system of rural personal credit is equally as great as the need for better land mortgage facilities, but that the fundamental differences between these forms of credit make it impossible to administer both principles in the same system of bank organization.

We are not prepared to recommend any specific plan. We do, however, (Continued on page 511).

A Successful Marketing Association.

POTATO growers of Michigan could get a million dollars more for this year's crop than they are getting; at least, that is the way men around Greenville, Mich., would figure it out.

The farmers of that section have an association through which a large portion of the potatoes grown thereabouts is marketed. Through the organization these growers are receiving from two to three cents more for their tubers than are the growers of other sections not having the same advantages. This increase for the 44,044,000 bushels estimated to have been harvested by the growers of Michigan this year would exceed the million dollar mark. Knowing that the readers of this journal

choose the managing officials. The directors hold three or four meetings during the year for the purpose of disposing of business matters. At the time of the annual meeting which is held during the winter months a banquet is given the members. This social feature is declared to be helpful in keeping the farmers loyal to the institution.

Outsiders can sell to the association upon the same basis as members, the only advantage of holding a membership being the privilege to participate in the control of the organization. It was conceded by the officers that this is a weakness and that a greater inducement should be held out to tempt men to become members. In this or-

as a private concern would meet them. The margin between the buying and selling prices goes to defray the cost of labor, upkeep, interest, depreciation, incidentals, etc., but this margin is narrower than with the private concerns. All that is required to pay on the money invested is six per cent interest. There is no desire to pile up dividends. Consequently the association is able to quote the farmers higher prices than a private concern would do unless forced by competition.

Since the main purpose of this venture is to help potato growers the management endeavors to make the post and coal business pay a large portion of the general expenses of the year. This they have been able to do and still be in a position to make attractive quotations to purchasers. Only on a few occasions has it been necessary for the directors to go to the members for subscriptions to make up a deficit.

This association has been doing business for about eight years. The present manager is a farmer and had had no previous experience in the produce business. This, however, does not prove that it is advisable to accept the services of any person in this capacity. It merely demonstrates that occasionally a farmer may be found who can go ahead and succeed with a business of this kind. The Greenville concern has been very fortunate in this regard.

Further Suggestions.

During our interview suggestions for improvements were made by the manager. In the first place, educational features have been neglected; scarcely anything has been done to encourage the production of more and better potatoes. Only by mere accident have farmers secured knowledge through the association of the better varieties of potatoes to grow, kinds of fertilizers to use and the most approved methods of culture and spraying. It would entail comparatively little expense to conduct a comprehensive campaign that would directly aid the growers of the community. It is felt that this work would serve also in keeping members more loyal in times of unfavorable competition or other trying difficulties.

It was also suggested that the association could be useful in introducing

a small bank account. In spite of this condition, it must be admitted that the Greenville Association has been remarkably successful in the business accomplished on so small a working capital and with so limited an equipment. This only goes to show that where a number of persons in a community are imbued with the spirit of co-operation, there is no excuse for their not trying out the plan. Of course, it frequently happens that a large investment will often cause men to stand by a concern longer and thereby help it through trying times than if no money is involved, but on the other hand, many co-operative concerns have failed by reason of an over-investment. That same common sense that brings the individual success should be present in the organization and management of co-operative concerns.

The Greenville Produce Company must be complimented for the quiet but effective manner in which it has conducted so large a business for the community it serves. While its officers do not claim it to be a model co-operative enterprise the fruits of their labors show that the concern has been well guided.

RESPONSIBILITY FOR CLEANLINESS OF MILK.

Where does the responsibility of the milk dealer begin and where does it end? This question is being asked many times each day by all classes of people that have anything to do with milk and it is hard to place the blame. Professor Ivan C. Weld, head of the Department of Research, George M. Oyster, Jr., Washington, D. C., attempted to answer this question at a meeting in connection with the recent National Dairy Show. It is interesting to note in this connection that the George M. Oyster, Jr., enterprise is one that has for its object the sanitation of milk supplies and one of the projects which has been worked out is the relative effect on infant mortality of pasteurized or raw milk. While it is true that raw milk seems to be more palatable for babies, yet the results seemed to show that the mortality was not so high when the children were fed on pasteurized milk.

"A man should be held responsible



Office of Greenville Produce & Supply Co., a Farmers' Co-operative Association. Mr. Walker, Treasurer and Manager, in Foreground.

would be interested in such an institution we recently made a study of this one to learn something of its work and organization.

To Buy and Sell Potatoes.

The purpose of the association is "to hold the dealers in line." The question was asked several times, and the above answer was invariably given. Besides the farmers' association there are three private dealers doing business in Greenville. Occasionally these dealers strive to secure additional quantities of potatoes by advancing their bids. When these prices reach a level where the association cannot afford to purchase, then the manager advises members and others to sell to the private concerns. It is found, however, that when quotations are the same, the association gets a much larger proportion of loads than do the private concerns. Through this competition prices are kept up and the farmers are benefited to an extent that is not always appreciated.

The main function of this association is to buy and sell potatoes, although coal and fence posts are secured for the members and others, and eggs, apples and grain are occasionally bought. The amount of business done ranges from \$50,000 to \$100,000 per year. During the busy season two, and sometimes three, carloads of potatoes are shipped out each day. Besides acting in the capacity of a selling and buying agent, the association stores produce for those who desire to hold for a better market. A storage building has been provided where about 5,000 bushels of potatoes or other products can be held over. Should the farmers choose to sell their products elsewhere after being stored in the association's warehouse, a flat rate of one cent per bushel is charged the holder. Should he choose, however, to sell to the organization, no storage charges are made.

Organization and Membership.

The concern is organized after the same manner as most of the mutual associations in the state are. Any farmer can become a member by taking a \$10 share of stock. The members at their annual meeting select a board of directors and these directors

organization, it is found that the number of outsiders who do business is about equal to the number of members, and some of the non-members have shown themselves even more loyal to the association than those holding shares.

Capital and Equipment.

The business done has been limited by the working capital. It was held that an organization of this kind should have at least \$10,000 with which to carry on its work. This particular company, however, has been getting on with much less. Each year however, all surplus capital is added to the working fund, and it is expected that in time this handicap will be lessened if not wholly eliminated. Because potato buying constitutes the bulk of the business done, the greatest amount of capital is required in the fall. By exercising care in selecting houses to whom shipments are made, the association has been able to keep losses down to a minimum; thus the working capital has been conserved.

The equipment is not expensive, especially when considered in connection with the large amount of business done. The buildings consist of an office, a warehouse and coal sheds. The value of these structures was estimated at from \$2,800 to \$3,000, this estimate includes scales and other necessary equipment for handling the business. The buildings are all well located for convenience in receiving and shipping produce. Sidings are available to two independent lines of railroads, which is an aid in securing satisfactory transportation service.

Two men are required to manage the business and look after the books. One other regular helper is hired, the office being kept open throughout the year. During the fall and at other times when business is rushing, additional help is taken on. Since the farmers who deliver potatoes or other products do most of the work of unloading and placing in the cars, the association is not required to provide for a large amount of labor outside of the clerical and managerial duties. This enables the accomplishment of a big business at little outlay.

How Financed.

Expenses are met in the same way



The Cost of Handling is Reduced by the Farmers Removing Loads to Cars.

new varieties of potatoes; for it is in a much better position to do this than are individuals. Where seed from localities peculiarly situated to grow superior stock is wanted, the association could import the seed and sell to the members.

Another suggestion made by the management was the need for a large working capital. It is a great handicap in busy seasons to have limited funds for buying. Much worry and confusion results in an effort to secure advancements on shipments, to make loans and otherwise patch out

for the product which he sells," is the opinion of Professor Weld. If the producer of the product is also the retailer of it, as often happens in the milk business, then the producer is responsible for the cleanliness and purity of his product. If dealers do not produce the milk which they retail, they should get definite information as to just how that product is obtained. This is not only good business but it is a duty which the dealer owes to the people who repose confidence in him and trust him with one of the most easily contaminated foods

there is. The dealer should get a guarantee from the producer that the milk has been produced under certain conditions. Besides this, a rigid form of inspection as well as chemical and bacteriological laboratories should be provided in connection.

"Safety First" should be the slogan of the milk dealer as he holds more lives in his hands than does the engineer on any of our greatest continental thoroughfares. Most cities have an ordinance stating that milk

shall be considered adulterated if the test goes below 3.5 per cent, and so dealers should discourage thin, low-testing milk and encourage the production of higher testers by giving a bonus on this high-testing milk. After the dealer has taken care to cull out those producers who are unreliable, Professor Weld believes that the most healthful product would result were it pasteurized and delivered at a temperature of not more than 50 deg. F. Ingham Co. I. J. MATHEWS.

The Possibility of the Auction.

THE much-shouted slogan, "Eliminate the middlemen," has been not unlike some of the ultra-fashions of the past decade. It was a bit too radical and has been abandoned or modified by most students of marketing for something more conservative. The New York Marketing Commission showed this in a striking way when it presented statistics showing that, should the wholesale dealers in the metropolis be done away with, the procession of retailer's wagons lined up to secure produce at the unloading stations would be so long that it would take an entire week for them to be taken care of. Middlemen are a necessity in the large modern cities and the rightfully popularized slogan of today is, "Eliminate some of the Middlemen."

The Auction System.

It appears to the writer that the scheme of disposing of fruit and produce by public auction is one which would accomplish the results desired and should receive much more attention than it is being given. Marketmen are familiar with such scenes as those enacted daily on the piers of the Erie Railroad in New York city, where thousands of cars of fruits are sold annually. Most other large cities, such as Chicago, Pittsburgh and St. Louis, employ this method to quite an extent, but in no place is it developed to the full possibilities which it offers. One reason for this was demonstrated to the writer recently in interviewing brokers and merchantmen of Water street in Chicago. They were unanimous in denouncing the encouragement of the auction system. And why? Because it meant that they would be put out of business. Under the auction system the number of dealers who handled the product and deducted their own fee without adding anything to the value of the produce itself would be reduced to a minimum.

Taking the Short Cut.

A few days ago the writer observed nine separate and successive transactions made on a car of potatoes before the tubers themselves arrived in Chicago. Each dealer in turn had arranged to buy and sell the car of produce at a profit. These prospective deals were, of course, all conducted on paper and the majority of dealers involved did not even expect to see the potatoes. In this instance, however, the grower happened to visit the market shortly before the arrival of his car and was shrewd enough to discover that the bulk of his profits were to go into the pockets of the middlemen. Accordingly he made other arrangements and cancelled his original bargain with the first dealer. The remaining eight tentative transactions then collapsed like a row of dominoes and the retail trade was reached through a single middleman.

Retail Prices Should Change with Wholesale Values.

The Mayor's Market Commission of New York makes the following criticism: "The greatest fault of the present retailing system is the inflexibility of prices. They fail to reflect the fluctuations of wholesale prices so greatly that the wholesale market may be glutted and goods be spoiling in the freight yards, and the retail prices through the city be scarcely depress-

ed. This condition is due to many causes: A season of high prices will accustom the public to regard these prices as normal, with the result that they either cease to buy the article or view with suspicion goods marked at a lower figure. The public knows very little about wholesale prices, as they are not reported in a way to reach average consumers; consequently the demand for goods is not formed intelligently. The system of marketing goods through a long system of dealers tends toward rigidity in demand and price. Both jobber and retailer are cautious about buying more than their accustomed retail trade will move off, and will rather buy the usual quantity and hold it at a profitable price than take the risk of buying freely when the market is low and working up a demand for the goods."

Auctions Control Large Markets.

Governor W. H. Glynn, in his communication to the New York Legislature, recommending the establishment of general auction markets where farm products could be sold by licensed auticoners, recalls the establishment of such auction markets in France some twenty years ago and the provision then made for publicly licensed auctioneers. Although only a comparatively small percentage of all the produce sold by farmers in France now passes through the hands of public auctioneers, the fact that this method of selling is open to all producers and is comparatively free from abuses, serves to fix prices and define standard grades and packages. It has compelled produce dealers and merchants to treat their shippers with fairness and justice.

Establishing Just Prices.

In such cities as Chicago most of the fresh fruits of California and the west are disposed of through auction. The sales are conducted by auction companies who tax both the shipper and the buyer to such an extent that stock in these organizations is held as an excellent investment. Even with the auction companies taking out their profit it has proven to be a satisfactory sales method of disposing of tobacco in Virginia and North Carolina, wool from the northern Rocky Mountain states, and to some extent, rice in Louisiana and Texas. In some countries fish are handled by this method. In every instance it has been shown that the unnecessary middlemen have been eliminated and that on the whole produce sold under the hammer goes at its rightful value. Certainly no more simple and efficient device could be conceived for the unhampered operation of the law of supply and demand on prices.

From what has already been done along this line, it seems logical to believe that auction sales conducted at cost by municipal governments through licensed auctioneers would simplify the present complex marketing system, giving to the producer the real value of his crop and to the consumer the benefit of all advantages which are rightfully his.

Illinois.

D. W. FRANCISCO.

A BEAN GROWERS' ASSOCIATION.

(Continued from page 509). recommend to the Congress such further investigation of the subject as

may develop informed opinion and lead to effective legislation.

It will be seen that the first eight resolutions refer to land mortgage credits and the ninth to personal credits. A resolution was adopted by the conference not only to continue the work for which the conference was called, but also to organize a campaign in favor of rural personal credits. To this end another resolution was adopted asking the president to appoint a commission to take testimony and gather information concerning rural personal credits.—John A. McSparran.

Crop and Market Notes.

Michigan.

Clare Co., Nov. 23.—The ground is frozen and we have had light flurries of snow. Crops secured except corn, and shredders are busy. Farmers are fixing up their buildings for winter. Lots of beans being sold at \$2.15 per bushel. No hay sold on account of the quarantine. Butter 28c; eggs 26c; cream 30c; fowls 8c.

Kalkaska Co., Nov. 19.—Light snow covers the ground, which is frozen too hard for plowing. Some corn is yet to be husked. Wheat and rye are in good condition. Some hogs and cattle still in farmers' hands, owing to the quarantine. Market for potatoes is very unsatisfactory. Beans are bringing about \$2. Poultry prices are low. Rough feed is plentiful.

Washtenaw Co., Nov. 21.—The yield of crops has been very satisfactory. Potatoes have made the best average yield in years, 250 bushels per acre being nothing uncommon. Corn a good crop, many fields doing better than 100 bushels per acre. Beans fair but not up to the average. New meadows, wheat and rye are going into the winter in far better than average condition. Not much stock except cows left. The largest part of grain raised is marketed through cows and hogs. Farmers generally have an abundance of feed for their own use, with some hay to sell, which brings \$11; potatoes 35c; butter 35c; eggs 28c.

New Jersey.

Monmouth Co., Nov. 23.—Meadows and new seeding poor on account of dry weather. Wheat and rye looking good. Potatoes yielded about 125 bu. per acre, and are worth 50@60c. Hogs are about the only live stock being fed and they are scarce and high. Corn husking is about all done, with a good crop. The weather has been very dry until last week. Wheat \$1@1.10; rye 80c; corn 65@70c.

Ohio.

Hancock Co., Nov. 21.—Potatoes yielded very well. Corn is making a fair yield, late corn being very good. Meadows good, wheat and rye not as good as usual owing to the recent cold weather. Many hogs on feed yet, as this county and many others are under quarantine for foot-and-mouth disease, which is very bad in eastern part of the county. Plenty of feed on hand for winter. Some hay and wheat will be sold, but not much corn. Hay \$11@13; potatoes 45c; chickens 9c; wheat \$1.05.

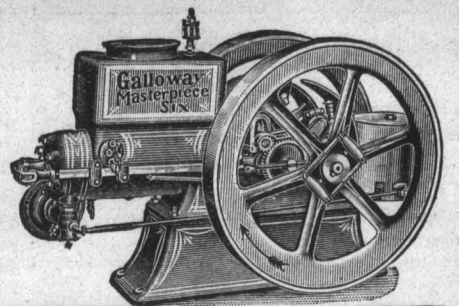
Warren Co., Nov. 23.—Corn husking is almost done, the yield being about 70 per cent of average, and quality fair. Wheat looking good; meadows fine, though some seeding was damaged by summer drouth. No live stock of any kind moving owing to the quarantine against foot-and-mouth disease, though there are no cases in this county. Hog cholera is still taking its toll. There are a good many hogs ready for market as soon as shipping can be resumed. A few cattle are also ready. Farmers have plenty of roughage for winter, but many will have to buy grain and dairy feeds. About ten per cent of the wheat crop is still in farmers' hands. Corn 50c; oats 50c; wheat \$1.08; butter 35c; cream 81c; eggs 35c; chickens 13c per pound.

Carroll Co., Nov. 23.—We have nice weather, not much snow yet, and the roads are in the finest condition. The farmers are busy husking corn and shredding fodder; there is a lot of soft corn this year. All live stock is in fine condition, and there is no foot-and-mouth disease here.

Indiana.

Elkhart Co., Nov. 19.—The weather has been fine for fall work. Potatoes are yielding well. Corn about half a crop. New seeding of wheat and rye fine. Farmers are well supplied with roughage. Little grain and stock are being marketed on account of the quarantine. There are quite a number of farm sales, and stock and farm tools selling cheap. Hay \$15; corn 55c; wheat \$1.07; hogs \$7; chickens 10c; eggs 30c; butter 28c.

(Continued on page 513).



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Markets.

GRAINS AND SEEDS.

December 1, 1914.

Wheat.—The trading in this grain continues on practically the same basis as prevailed last week. Monday's market started off with a weak tone, due largely to the bearish sentiment abroad which was based upon large surplus estimates from Argentine. There was a reaction, however, when the visible supply for America showed a decrease instead of an increase, as was expected. The receipts at primary elevators had been large, and accumulations were expected to be such as would discourage trading at last week's values. There had, however, been considerable buying and liberal exports, which seems to have more than overbalanced the sales by farmers, and resulted in a sharp upturn in prices. Cash wheat is in good demand on the local market, and millers report an increase in orders for flour. One year ago the price for No. 2 red wheat was 97½¢ per bushel. Quotations are as follows:

	No. 2	No. 1	
	Red.	White.	May.
Wednesday	1.13½	1.10½	1.23
Thursday	1.13½	1.10½	1.23
Friday	1.12½	1.09½	1.21½
Saturday	1.13	1.10	1.22
Monday	1.13½	1.10½	1.22½
Tuesday	1.14	1.11	1.22½

Chicago, (Nov. 30).—No. 2 red wheat \$1.12½@1.14½; Dec., \$1.13½; May \$1.19½.

Corn.—Our quotations for corn this week are on the basis of the new crop. Farmers have been selling corn liberally and these heavy receipts at primary elevators depressed the market. Especially on Monday, did the bearish influence show in the downward movement of values; however, when wheat took a sudden turn upward a rally in corn recovered a considerable of the loss. One year ago the price for No. 3 corn was 68¢ per bushel. Quotations are as follows:

	No. 3	No. 3	
	Mixed.	Yellow.	
Wednesday	66	67	
Thursday	66	67	
Friday	65	66	
Saturday	64	65	
Monday	63½	64½	
Tuesday	63½	64½	

Chicago, (Nov. 30).—No. 2 yellow corn 68½¢; Dec. 63¢; May 69¢ per bu.

Oats.—Trading in this grain has been governed almost entirely by the course of other grains. A large portion of the grain moving is under contract, and the general tone of the deal is steady. Foreign buyers are taking the grain liberally. One year ago standard oats were quoted at 43¢ per bushel. Quotations are as follows:

	No. 3	
	Standard.	White.
Wednesday	51	50½
Thursday	51	50½
Friday	50½	50
Saturday	50½	50
Monday	50½	50
Tuesday	50½	50

Chicago, (Nov. 30).—No. 3 white oats 47@47½¢; standard 48@48½¢; Dec., 48¢; May 52½¢ per bushel.

Beans.—Bearish sentiment returned to the bean markets this week and prices are down. Export demand has fallen off. On the local market trading is dull. Detroit quotations are: Immediate and November shipment \$2.35; December \$2.40. Chicago reports a weaker tone and lower prices for pea beans. Pea beans, hand-picked, choice, are quoted at \$2.50; common at \$2.35@2.50; red kidneys, choice, at \$3.25@3.50.

Rye.—This grain continues to advance and No. 2 is now quoted at \$1.06, which is higher than last week.

Clover Seed.—Market is easy and quiet. Prime spot quoted at \$9.15; December \$9.25; March \$9.45; prime alsike sells at \$8.75.

Toledo.—Prime cash \$9.20; December \$9.20; March \$9.45; prime alsike \$9.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$6.20; second \$5.80; straight \$5.35; spring patent \$6.50; rye flour \$5.60 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$24; standard middlings \$25; fine middlings \$32; coarse corn meal \$32; corn and oat chop \$28 per ton.

Hay.—Quotations are steady. Carlots on track at Detroit are: New No. 1 timothy \$16@16.50; standard \$15@15.50; No. 2, \$13@14; No. 3, \$10@12.

Chicago.—Choice grades are steady at slightly lower values, while common is steady. Choice timothy \$17@

17.50; No. 1, \$15@15.50; No. 2, \$12@13.

Straw.—Steady. Rye \$7.50@8; oat straw \$7@7.50; wheat straw \$7@7.50 a ton.

Chicago.—Rye straw \$9@9.50; oat and wheat straw \$6@6.50.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market showed briskness Monday at last week's prices. Extra creamery 32c; firsts 29c; dairy 21c; packing stock 20c per lb.

Chicago.—While the prices remain steady trading early this week showed an easier tone. Choice goods show fair inquiry but inferior grades rule easy. Extra creamery 32c; extra firsts 30@31c; firsts 27½@29½c; seconds 24@26½c; packing stock 21@21½c.

Elgin.—Sold at 32c, which is the same as last week.

Eggs.—Market firm with prices unchanged. Fresh stock sells at 30c per dozen; current receipts 26½c.

Chicago.—Aside from the demand for strictly fine eggs there is very little pressure in the egg trade here this week. Prices rule lower. Miscellaneous lots, cases included, 20@29c; ordinary firsts 26@27c; firsts 28@29c per dozen.

Poultry.—Offerings are large and the trading is easy. Prices unchanged. Springs 12c; hens 10@12c; ducks 14½@15c; geese 14@14½c; turkeys 18@20c.

Chicago.—Values for all kinds are off with the demand weak and supply heavy. Quotations on live are: Fowls good 9½@10c; spring chickens 10½c; ducks 10½c; guinea hens, per dozen, \$3.50; turkeys 10@12½c; geese 8@10c per lb.

FRUITS AND VEGETABLES.

Fruits.—Pears, Keiffers 50@60c; grapes 12@14c for blue, per pony basket.

Chicago.—Pears, Keiffers, \$2.50@2.75 per barrel; Catawba grapes 7@10c per pony basket.

Apples.—A better feeling prevails and good stock is moving with more freedom. Baldwins \$2@2.50 per bbl; Greenings \$2.50@2.75; Spy \$3; Steele Red \$3.50; Ben Davis \$1.50@2.

Chicago.—Market is steady for barrels and boxes. Bulk apples are about over and a good per cent of the offerings is small and inferior. Baldwins \$2@2.25; Kings \$2.50@2.75; Wageners \$2@2.25; Jonathans \$3.50@4; Greenings \$2.50@2.75; Northern Spy \$2.25@2.50; bulk apples 50@90c per 100 lbs., according to quality. Western box apples are selling for 75c @2.25 per box.

Vegetables.—Cabbage firm at last week's prices 75c@\$1 per bbl. At Chicago demand is fair but supply liberal, quoted at 90c per bbl, \$10 per ton for Danish.

Potatoes.—Market steady with supplies liberal. Carlots 30@35c per bu; in bulk 35@40c per bushel in sacks; at Chicago the market is weak at lower values. Michigan white, in bulk, are quoted at 40@46c per bushel; at Greenville, Mich., 30c in bulk.

Onions.—Market firmer and prices are steady, quoted at \$1 per hundred in bulk. At Chicago the market is higher. Michigan stock being quoted at \$1.25@1.50 per 100 lb. sack.

GRAND RAPIDS.

The city market was closed November 30, and will reopen April 1, according to the custom of past years. The market space is open the year round, however, for farmers with hay and straw to sell and is used quite freely in open weather. The potato market does not show much change, tubers selling here in a small way at 40@45c, with Greenville quotations at 30c, and prices at Cadillac and other loading stations ranging around 25c. Apples are reported in somewhat better demand, though the movement is still slow. Dealers are quoting 32@33c for fresh eggs, and 26@27c for No. 1 dairy butter. Fowls are worth 8c live weight, ducks and geese 10c, turkeys 14c.

DETROIT EASTERN MARKET.

The recent warm weather has encouraged trading on the city market. Apples are moving with more snap, with prices ranging from 40c@\$1. Potatoes are firmer at 45@50c, according to quality. Onions 40@75c for common; carrots 35c; rutabagas 25@30c; cabbage 40c; celery 15@25c, according to quality. No changes in the hay situation.

WOOL.

Supplies of the desirable grades of wool have become so limited that large transactions are becoming almost impossible. For this reason the aggregate sales of the past week at Boston were considerably below those of previous weeks. Woolen mills on this side are receiving liberal orders

for both domestic and foreign trade. This, with the embargo on wool from British colonies and the short supply should keep values on a comparatively high basis. Fleece wools are only moderately active, with prices at the high point of the season. Half-bloods are selling at 25c; three-eighths clothing at 26c; fine delaines 26½c; and quarter-bloods 30c. Foreign prices continue firm.

CHICAGO LIVE STOCK MARKETS.

December 1, 1914.

Cattle. Hogs. Sheep.
Receipts today..13,000 32,000 20,000
Same day 1913..22,901 38,577 34,635
Last week25,343 140,631 67,191
Same wk 1913..36,299 137,299 123,242

This Monday sees the beginning of another new system by which live stock arriving here is divided between quarantined stock that must be killed here and unquarantined stock that may be shipped out alive to slaughtering points. Trade in the former division was very slow at generally weak or lower prices, while in the shipping division there was more life and firmness in prices. Trade was late in getting started in cattle, with good fat beefs held at firmer to higher prices, while sheep and lambs of quality sold at steady prices, with a shipper paying \$9.50 for prime lambs, a small advance. Hogs in the quarantined division sold much lower, but in the shipping division they opened a dime higher, with a \$7.70 top, but later the improvement was largely lost. Hogs received last week averaged 214 lbs., or six lbs. less than a week earlier.

Workmen have built a tight board fence dividing the stock yards, and on one side all cattle from states not under foot-and-mouth disease quarantine are to be received and sold. These animals are to be allowed to be sent from here to other points. On the other side of the fence are handled live stock from Illinois and other quarantined states, and these must be slaughtered upon arrival. This plan was developed in order to make possible the resumption of live stock shipments from Chicago, discontinued since November 2. On Monday, November 16, the yards were opened to incoming stock, but the embargo against outgoing animals remained in force. Since then efforts have been made by live stock interests to arrange a plan by which shipments could be made from here, shipments in normal times comprising about 40 per cent of the live stock business of Chicago. Separate sellers and buyers have charge of the cattle in the "clean" division. Traders late last week were waiting anxiously for orders from Washington allowing shipments of healthy stock from here in sealed cars to points for slaughter, but no stock can be sent out for feeding purposes.

Cattle prices firmed up last week and ruled 25@50c higher for most desirable offerings, owing to the light supplies more than to any large demand from city buyers. Of course, inability to ship live stock from here was a serious obstacle to large buying, and had the offerings been anywhere near normal, prices would have gone much lower. A large share of the beef steers went at \$7.50@8.75, with choice beefs taken at \$9.50@9.75 and a few sales of fancy beefs at \$10@10.35. Good steers brought \$8.75 and upward, and sales were made all the way down to \$5.75@7.75 for inferior to fair grades, the cheaper lots comprising thin, light-weight steers that ordinarily sold as feeders to go to country points for finishing. Handy little yearlings sold especially well, and there was a good traffic in butchering cows and heifers at \$5.15@9.25, with cutters at \$4.75@5.10, canners at \$3.65@4.70 and bulls at \$4.85@7.25. Calves had a good sale on the basis of \$5@11.50 for coarse heavy to prime light vealers. Many thousands of distillery-fed cattle were shipped direct from Peoria, Ill., to a big packing house. With Chicago quarantined against shipments of live stock from here, rival markets received much larger supplies of stock than usual. Thanksgiving Day, for the first time, was observed as a day of trading in live stock.

Hogs met with an unexpectedly good demand last week, and prices ruled firm as a general rule, with some reactions, and prime weight consignments sold the highest, as was natural with a larger representation of light and middling weights than was seen several weeks ago. Recent receipts have averaged in weight 220 lbs., comparing with 209 lbs. a year ago, 224 lbs. two years ago, 214 lbs. three years ago and 233 lbs. four years ago. Prices paid compared well with average years and were not greatly different from those quoted one and two years ago. There was a narrow spread in prices, and the bulk sold close together. Other markets received larger supplies than in ordinary times, and the other day St. Paul reported rec-

ord-breaking receipts. Provisions were in good demand. Top for hogs for the week was \$7.75, with Saturday sales at \$7@7.65 for inferior light to prime heavy hogs, while pigs brought \$4@7. The best light hogs sold a dime below the best weighty lots.

Sheep and lambs sold remarkably high last week under the influence of a strong general demand, the receipts being greatly inadequate. Lambs comprised a large share of the offerings and sold up to \$9.45, while prime light yearlings brought \$8 and fancy two-year-old wethers \$6.40@6.50. On Saturday quotations were: Lambs \$6.25@9.45; yearlings \$6@8; wethers \$4.50@6.50; ewes \$3.50@5.75; bucks and stags \$3.50@4.50. Prices closed unusually high all around.

Horses have arrived in recent weeks in much larger numbers than a year ago, and offerings embraced numerous southern horses. Prices have ruled lower in many instances, the better class excepted, with no large showing of the class of good to prime drafters valued at \$240@285. Army horses for shipment to European countries are the most active, mounts selling at \$100@135 and artillery horses at \$150@175. Commercial chunks go at \$160@200 for horses weighing from 1,300 to 1,400 lbs., and inferior animals are slow at \$60@95, while drivers go usually at \$100@200. Fair drafters are valued at \$210@235.

LIVE STOCK NEWS.

The Northwestern National Bank of Minneapolis, the representative bank of the Minneapolis federal reserve district, has been gathering valuable information from its country correspondents regarding the operations of farmers and stockmen in that part of the country. Part of its information received from Minnesota correspondents follows: "Our best land is selling at \$120 an acre. We are dropping out of cattle for the market, but raise more hogs and sheep and keep from 10 to 15 cows for dairying purposes on the quarter. The average farmer on a quarter section of land will turn off \$2,000 worth of hogs up to \$3,500 at the present prices. Farmers in this section in the last 20 years have double discounted the merchants in the way of earnings. In a radius of 10 miles there are 25 farmers worth better than \$50,000. Practically everywhere throughout the state corn is mentioned as a good crop."

Official proclamation that foot and mouth disease in human beings is contagious and that physicians must immediately report cases was made a few days ago by the Chicago health commissioner, Dr. Young. He says: "Foot and mouth disease is transmissible to man, especially to children, by means of milk, but the danger is entirely removed by pasteurization. At the present time the disease, as far as we can learn, affects only a very small fraction of the territory supplying milk to the Chicago market. There is consequently not the slightest occasion for any popular hysteria on the subject of the milk supply. About 82 per cent of the milk now sold in the city is pasteurized. If the public will confine its purchases of milk to that which comes from plants installed and properly operated pasteurizing equipment, they need not concern themselves about the danger of infection. There is no danger of transmission by means of meat or meat products."

In various parts of Iowa there are as many horses as cattle, and farmers are reported to be raising their calves instead of selling them, as formerly. Feed, fodder and straw are plentiful, with a good crop of corn as well as of hay, except in sandy soil.

Large numbers of sheep have been shipped into Texas from Mexico and New Mexico, as this industry proved very profitable for winter. The flocks are pastured, and the cost of fattening is small, marketing being done in the spring. Texas and other southern farmers are going to diversify their farming work more than in the past, the folly of sticking to cotton so largely being now apparent, even if it is the easiest crop to raise.

Ranchmen in Texas are going more generally into stock farming than heretofore, and forage feeds are being grown extensively. No attempts are made to raise corn or wheat, but ranchmen are growing kaffir corn, milo maize and cane, which are sure crops and admirably adapted for winter stock feed. Silos are constantly growing in favor, as the cost of fattening stock is thereby materially lessened, and forage is obtained at such periods as grass is short.

Iowa stockmen are materially lowering their feed bills by furnishing plenty of silage and all the alfalfa hay the cattle will eat. They are also saving their good beef calves for maturing, finding that the up-to-date methods of fattening pays, the benefit to the soil being no small part of the benefit derived.

THIS IS THE LAST EDITION.

In the first edition the Detroit Live Stock Markets are reports of last week; all other markets are right up to date. Thursday's Detroit Live Stock markets are given in the last edition. The first edition is mailed Thursday, the last edition Friday morning. The first edition is mailed to those who care more to get the paper early than they do for Thursday's Detroit Live Stock market report. You may have any edition desired. Subscribers may change from one edition to another by dropping us a card to that effect.

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

December 3, 1914.

The supply of live stock at Detroit Wednesday and Thursday was very large, and on Wednesday night there was nearly a hundred cars on hand at the packing plants and the yards nearly blocked. The yards are badly handicapped owing to the full cattle division still being closed and one of the hog houses containing 40 pens being shut off on account of having to be repaired. Shippers should be very careful when loading in the country to see that their cars are carded, showing that they have been disinfected since November 5. Nothing not being so carded can be unloaded at the yards and must go to the packing houses for immediate slaughter.

Cattle.

Receipts 802. Market steady. Best heavy steers \$8@9; best handy weight butcher steers \$6.75@7.50; mixed steers and heifers \$6.25@6.75; handy light butchers \$6@6.50; light butchers \$5.75@6; best cows \$6@6.50; butcher cows \$5@5.50; common cows \$4.50@5; canners \$3@4; best heavy bulls \$6@7; bologna bulls \$5.50@5.75.

Roe Com. Co. sold Kamman B. Co. 1 cow wgh 940 at \$5.75, 2 steers av 715 at \$6.50; to Rattkowsky 2 cows av 1120 at \$5.75, 3 do av 783 at \$5.25; to Sullivan P. Co. 1 bull wgh 1050 at \$5.75; to Mason B. Co. 1 cow wgh 1100 at \$5.50, 11 steers av 940 at \$7.25; to Kull 3 butchers av 700 at \$5.75; to Rattkowsky 4 cows av 992 at \$5.60; to Schroeder 1 steer wgh 900 at \$4; to Sullivan P. Co. 2 cows av 900 at \$4, 2 do av 665 at \$3.

Haley & M. sold Thompson Bros. 15 butchers av 834 at \$6.20, 2 bulls av 1180 at \$6.50, 1 cow wgh 930 at \$4.50; to Hammond, S. & Co. 8 canners av 865 at \$4.10; to Schlischer 20 butchers av 886 at \$7.30; to Thompson Bros. 2 cows av 1250 at \$6.75, 2 do av 1140 at \$5.40, 1 do wgh 1100 at \$4.25, 1 bull wgh 890 at \$6.25; to Hammond, S. & Co. 10 canners av 883 at \$4.05; to Cooke 1 steer wgh 1100 at \$7.60; to Grant 12 butchers av 744 at \$5.20; to Kull 11 do av 809 at \$7.10, 2 steers av 950 at \$8.10; to Mich. B. Co. 36 butchers av 600 at \$6, 2 cows av 965 at \$5.50; to Kull 8 butchers av 730 at \$6.50, 4 cows av 840 at \$5.25.

Spicer & R. sold Mich. B. Co. 8 cows av 1196 at \$5.25, 2 do av 925 at \$4.25; to Kull 5 steers av 866 at \$7, 3 cows and bulls av 907 at \$6, 3 butchers av 820 at \$6.50, 1 heifer wgh 770 at \$6; to Sullivan P. Co. 25 butchers av 722 at \$6.25, 8 cows av 994 at \$5.25, 1 do wgh 1000 at \$4, 2 do av 990 at \$4.25, 5 do av 800 at \$3.75; to Goodwin 2 do av 985 at \$5, 2 do av 970 at \$5.50; to Bresnahan 6 heifers av 723 at \$6.

Veal Calves.

Receipts 339. Market dull. Best \$8@8.50; others \$6@7.50.

Haley & M. sold Kamman B. Co. 4 av 175 at \$7.50.

Spicer & R. sold Applebaum 5 av 140 at \$7.25; to Kull 14 av 150 at \$8.25.

Sheep and Lambs.

Receipts 6764; good lambs steady; common and heavy and sheep dull and 50c lower. Best lambs \$7.75; fair do \$7@7.50; light to common do, \$5.50@6; fair to good sheep \$4@4.25; culls and common \$2.50@3.75.

Bishop, B. & H. sold Sullivan P. Co. 21 sheep av 120 at \$4.50, 70 do av 95 at \$3.75, 20 do av 95 at \$4.75, 24 lambs av 65 at \$7.50; to Hammond, S. & Co. 121 do av 75 at \$7.75, 91 do av 75 at \$7.75; to Nagle P. Co. 58 do av 70 at \$7, 30 do av 45 at \$5.50; to Parker, W. & Co. 185 do av 80 at \$7.75; to Hammond, S. & Co. 46 do av 75 at \$7.75, 8 do av 60 at \$6.75, 182 do av 78 at \$7.75; to Thompson Bros. 70 do av 60 at \$6.65; to Nagle P. Co. 210 sheep av 110 at \$4.25, 22 do av 95 at \$4, 111 lambs av 75 at \$7.75, 173 do av 75 at \$7.75; to Hammond, S. & Co. 62 do av 55 at \$6.50.

Hogs.

Receipts 9143. At yards \$6.60; at packing houses \$6.75 without feed or water for storage animals.

Bishop, B. & H. sold Hammond, S. & Co. 750 av 200 at \$6.60.

Spicer & R. sold same 175 av 200 at \$6.60.

Roe Com. Co. sold Sullivan P. Co. 580 av 190 at \$6.60.

Bishop B. & H. sold Parker, W. & Co. 960 av 195 at \$6.60.

Haley & M. sold same 310 av 200 at \$6.60.

CROP AND MARKET NOTES.

(Continued from page 511).

Indiana.

Davies Co., Nov. 23.—Late potatoes good; beans and corn fair average crop; corn damaged by worms; meadows in fine shape for winter; late rains made a good growth for a winter covering. Quite a good deal of grass sown. Acreage of wheat above the average. Larger acreage of rye than usual. Both in fair condition. Small number of cattle and hogs on feed. Most farmers have enough corn, hay and silage for winter use. Very little grain being sold except wheat. Some cattle and hogs going to market. Most of the apples are sold or are in storage. Hogs 7¼c; cattle 7c; apples around \$2.25 per bbl. Seven cases of foot-and-mouth disease in our county. Two herds have been slaughtered.

Missouri.

Barton Co., Nov. 23.—Weather is ideal. Wheat fine, some Hessian fly in the early sowing. Corn is making from 10 to 50 bushels per acre. Hog cholera is in some localities; plenty of hogs and cattle to eat up the corn. Roughage is plentiful and young stock should go through the winter in good shape. Wheat \$1; corn 55c; oats 45c; hogs \$6.50; cattle \$4.50@8; cream 28c; eggs 24c; northern potatoes are selling from the car at 55¢@65¢; sweet potatoes (home-grown) from 50¢@\$1.

Vernon Co., Nov. 27.—Weather has been fine for corn gathering, and most of corn is in crib. Hogs are dying with some disease, some think it cholera. Some disease among cattle but no foot-and-mouth disease. Horses are getting scarce, owing to the large number being shipped out for the European war. Hogs \$7; cattle 5@8c; hay \$7.50; corn 55c; wheat 97c; oats 40c; chickens 10c; turkeys 15c; butter 25c; eggs 25c.

Nodaway Co., Nov. 23.—Corn making a fair yield. There is much sickness among hogs, but no foot-and-mouth disease. Fall pastures are fine, and stock is in fine shape, though there is not much stock being marketed. Not a large acreage of wheat sown, but that put in made a good start, as the ground is not frozen yet. Hogs \$8; cattle \$6@8; chickens 10c; eggs 25c; butter-fat 27c; butter 25c; corn 65c; hay \$15.

Kansas.

Cowley Co., Nov. 24.—Not many potatoes and no beans raised here. Idaho potatoes are selling at 65¢@75¢ per bushel. Corn crop mostly light, though some fields are yielding well. Wheat and rye need rain badly; some wheat hurt by fly. Very few cattle or hogs on feed; no sheep. There will be a surplus of rough feed this winter but not much grain for sale except wheat. Butter 25c; eggs 22c; milk \$1.80 per cwt.

MICHIGAN FARMERS' INSTITUTES.

The State Superintendent of Farmers' Institutes announces the following changes in dates for Farmers' Institutes to be held in Oceana county, during December:

Hart, Dec. 15; Mears, Dec. 16; Benona Center, Dec. 17; New Era, Dec. 18; Cranston, Dec. 19; Blooming Valley, Dec. 21.

THE NEW YEAR OF THE CENTURY.

The Century, beginning with November, is interpreting to its readers what lies back of the bare facts of bulletin and despatch. A notable group of Century contributors is engaged on this important work. In New York, W. Morgan Shuster, author of "The Strangling of Persia," and Samuel P. Orth, professor at Cornell University, will write of the war and its effects from an ethnic and political point of view. From London, James Davenport Whelpley will deal with the personalities of the war lords and the spirit of the nations. Estelle Loomis, the brilliant short story writer, now in Paris, will send sketches of vivid human interest. Dr. Hendrick Van Loon, historian and journalist, has gone to his native land, Holland, where he will write of the Lowlands in war time. Arthur Bullard, the well-known novelist and travel writer, is to leave for Europe to help build the literature that will grow out of the war itself.

In addition The Century, during 1915, will have four notable serials—one by Jean Webster, author of "Daddy-Long-legs." A number of life-stories of "Constructive Americans," written by such keen biographers as Geo. Creel, Harvey O'Higgins, and Harold Kellock. The publishers, The Century Co., Union Square, New York, are making a special offer to new subscribers of the twelve months of 1915 for the regular subscription price of \$4.00, with October, November and December of 1914 free, thus giving new subscribers James Lane Allen's story, "The Sword of Youth," complete.

Veterinary.

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

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to someone else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany letter.

Nasal Catarrh—Distemper.—I have a horse that either took cold, causing catarrh, or he may have light attack of distemper. E. G. H., Maybee, Mich. Keep your horse in a warm comfortable, clean, well-ventilated stable. Feed him food of a laxative nature. Rub throat with one part tincture iodine and five parts camphorated oil. Give 30 grs. powdered sulphate iron, 30 grs. of ground nux vomica and a tablespoonful of ground gentian at a dose three times a day.

Mild Attack of Azoturia.—I have a six-year-old mare in good flesh and when driven a mile or two she stiffens in hind legs, perspires very freely and I have had to leave her in stable three or four days until she recovered. I would like to know what this ailment is and how to treat her. R. J., Deckerville, Mich.—Your mare suffered from azoturia, usually brought on by over-feeding of grain when idle, and for want of regular daily exercise or work. When idle don't feed to exceed one-third as much grain as when she works and be sure the bowels are kept open, and as you know, every work horse should be exercised daily. When an attack comes on stop the horse and put her in the nearest stable, give a cathartic and let her remain quiet, keeping the hind quarters clothed warm, furnish the animal with plenty of tepid water and if she does not get down, she will get well in a few days.

Bone Spavin.—I would like to have you give me a remedy for bone spavin. N. H. R., Lenawee, Mich.—Apply one part red iodide mercurv and four parts lard every ten days, or you can safely use any of the commercial remedies that are regularly advertised in this paper. Kindly understand when treating bone spavin lameness, the horse should have absolute rest.

Mange.—I have a bay horse 13 years old, with bare yellow patches around nose and eyes, also around anus; besides this horse is dull and dumpish. F. C., Pompeii, Mich.—Apply one part oxide of zinc and five parts vaseline to bald parts of skin once a day; also give him a dessertspoonful of Donovan's solution at a dose two or three times a day.

Chronic Lymphangitis.—I have a horse that had lymphangitis or Monday Morning disease, some two months ago; since then left hind leg stocks badly, but horse is in good health and not lame. W. H., Paris, Mich.—Chronic lymphangitis is an inflammation of the lymphatic system.

Tuberculosis of Liver.—Could you tell me what is the trouble with my hens. They die and when opened, I find the liver covered with small hard yellow bunches and the liver is soft; it also has a bad odor. These fowls have a large range, are fed wheat and oats, also have plenty of fresh water. E. M., Webberville, Mich.—Your hens die the result of tuberculosis of liver and as you know, tuberculosis is usually incurable in poultry; therefore, you had better destroy and burn the sick ones; however, if the disease is in its incipient form and not generalized, and not affecting any of the tissues which are consumed as food, they need not be a total loss. The fowls should have good care, the premises kept clean, their roosting place cleaned every few days, plenty of fresh air admitted without draft; furthermore, their roosting place should be dry, not damp.

Sow Fails to Breed.—I have a sow that had a litter of 12 pigs last spring, but has failed to come in heat since, and I would like to know what to do for her. S. W., Six Lakes, Mich.—Give her 10 grs. of ground nux vomica and 40 grs. of powdered capsicum at a dose in feed three times a day.

Bull Has Sweeney Shoulders.—My yearling bull has fastening of shoulder muscles. When walking moves rather stiff, but appears to be in a healthy condition. D. G. C., Bellevue, Mich.—Clip off hair and apply one part cantharides and four parts fresh lard every ten days.

Curable Ailment; besides, after a horse has had one attack, they appear to be more predisposed to future attacks. It is well to keep in mind that lymphangitis is usually the result of generous feeding of idle horses and for

want of exercise. Feed very little grain when he is idle; keep his bowels active, either work him or exercise him every day. Also bandage leg in cotton after he has been exercised for two or three hours. By giving 1 dr. iodide potassium at a dose three times a day, you will succeed in reducing swelling somewhat, but it is doubtful about reducing it to normal size.

Poll-evil.—I have a horse that has poll-evil; our local Vet. applied blue stone to remove pipe, but it failed and there is yet some discharge and the cavity will hold about one ounce of fluid. A. C., Gobbleville, Mich.—Put 30 or 40 grs. of iodoform in a gelatine capsule, then push it to bottom of cavity and leave it there, and you had better repeat these applications every two or three days; also apply peroxide of hydrogen to clean pus from surrounding parts, instead of washing it with soap and water.

Stomach Worms.—I would like to know how to destroy stomach worms in horses and hogs. R. A. W., Kingsley, Mich.—Give horse 1 oz. turpentine in a pint of milk on an empty stomach occasionally, is the least expensive and most effective remedy for stomach worms in horses. A larger dose of turpentine can be given with safety; however, it is best to give it in about ten times its quantity of oil, or 15 times of milk. In hogs a teaspoonful in six or eight ounces of milk, or to mix some turpentine in salt and give it in feed, will also have a good effect.

Stomach Worms.—I bought a bunch of lambs at a sale ten days ago; they are thrifty, but when they run they cough and I am unable to tell what ails them. Do they need treatment? L. A. B., Highland, Mich.—Give each one a teaspoonful of gasoline in half a pint of milk once a week for three weeks. Don't hold head too high when drenching them.

A RAZOR SNAP.

A new lot of Imported German Razors at 45 cents while the supply lasts, is now offered by the Michigan Farmer.

The razors are made of the best German steel, five-eighth inch blade, and black handle. We will not say just what these razors ordinarily retail at, as prices on razors vary with each dealer, but we have seen razors no better sold at \$1.25 and \$1.50.

Every man who shaves ought to have at least three razors as it is a proven fact that giving a razor a rest is beneficial to it, and here is your opportunity to get a supply at very little cost.

So, only while our present supply lasts the price is 45 cents each, postpaid, or a half-dozen at \$2.00, postpaid.

A Strop Bargain, Too.

We also have a quantity of Zig-Zag All-in-One razor strops that dealers sold at 60c each. These strops are made of finest horsehide leather and one side is treated with All-in-One solution which makes it possible to put a hair-splitting edge on the dull-est razor. It combines the strop and hone in one.

The special prize on the strop alone, while the supply lasts, will be 25 cents, postpaid, but if ordered together with one of the above razors the price of both will be only 65 cents postpaid, or \$1.00 with the Michigan Farmer one year; \$1.50 for three years and \$2.00 for five years.

This would make a nice Christmas present, worth double the cost.

RABBITS
TURKEYS
DUCKS
GEESE
CHICKENS
HOGS
VEAL, ETC.

Our Present Specialties

Rush consignments forward by express. Prompt sales and quick returns assured by our 26 years in one store.

CHAS. W. RUDD & SON,
Commission Merchants, Detroit.

HAY

Ship your Hay to Pittsburgh and to Daniel McCaffrey Sons Company Pittsburgh, Pa.

Ref.—any bank or Mercantile Agency.

Our 20 Years Experience.

Handling Poultry, Calves, Pork, Wild Rabbits, Butter, Eggs and General Produce in this market should be of value to you. Best prices. Honest treatment.

NAUMANN COMMISSION CO.
Eastern Market, Detroit, Michigan

Griggs, Fuller & Co., Wholesale Commission House, potatoes, poultry and rabbits. Quick returns.

FARMERS—We are paying five to eight cents above highest Official Detroit Market quotation for new laid eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., 31-33 Griswold St., Detroit, Mich.

CASH PAID For Butter, Eggs, Poultry, Calves, Hogs, Potatoes and Apples. Write us before selling elsewhere. CAMPBELL BROS. Co., 245 Napoleon St., Detroit, Mich.

POTATOES—HAY—More Money if you Consign to THE E. L. RICHMOND CO., Detroit. 21 years in business. Reference your Banker.

Computing Garden Profits.

The statement that the land which is devoted to the garden on the average farm returns more profit for the time and labor invested than any other spot of equal size on the same farm has been made a great many times. Some time ago I planted a garden and at that time I told the readers how I was caring for it, and promised to tell them in due time how I came out. During the last few years a great effort has been put forth by officials of the Department of Agriculture and others interested in farm management work to get accurate information as to the actual cost of production of various crops. Further than this, I was determined to find out as near as possible just what that piece of ground would do and how much profit it would bring in. If it would not return a profit, I wanted to know that, and with these ends in view, the cost of everything was taken into consideration, together with the number of hours which were actually given over to caring for the garden.

The garden plot is of an oblong shape and measured rather accurately, it contains 6.4 square rods or about one twenty-fifth of an acre. The soil is heavy clay, and when the rains came, it was impossible to work the garden. The man of whom I rented gave me some coarse manure and straw. Since the barn was near the garden, the manure was transferred with a wheelbarrow. The time consumed in doing this was recorded. This manure was very coarse and put on in the spring as it was, I do not believe that any returns were received from this expenditure of time. However, I believe that its equivalent was received in added returns from manure which had been applied the year before the garden came into my hands.

Cost of Production Important in Reckoning Profit.

In a former issue of the Michigan Farmer I read an article by M. E. O., of Van Buren county, on "Returns from a Farm Garden." When I first noticed this article, I thought it was just what I wanted, but when I sat down with a pencil and paper to figure out the cost of production, I found that there was nothing upon which to base the work, as the only production item which is given is "seeds, \$4.75." It would seem that the conclusions drawn are somewhat misleading. At a casual glance, one is led to believe that one-fourth of an acre returned a profit of \$80, but reading further we see that the garden, exclusive of corn and lima beans, covered one-fourth of an acre. Now, when we strike from the account the returns from the sweet corn and lima beans sold, the returns are reduced by \$25 and the income from one-fourth of an acre becomes \$55 instead of \$80. There are a whole lot of things which must be charged against that \$55, such as rental value of ground, time consumed in hoeing and time consumed by "father going early in the morning with a horse and wagon three times a week to sell the vegetables to the resorts." Unquestionably the garden did return a handsome profit for the investment but the account given does not show it.

I appreciate the fact that it is exceedingly difficult to keep an accurate account of the entire output of a garden on account of the many different vegetables and fluctuating market prices. In my garden account, the vegetables which were sold were credited with the actual price received, while those vegetables which were consumed in the home are credited with the retail price, the price for which we could have had the grocer bring them to the door. In order to make this thing equal, since the garden was some distance from the house, it was charged with all the time of going, picking the vegetables and returning with them to the house.

This is included in the labor item and was charged at the rate of 15 cents an hour, the same figure for which I could have hired the work done.

Mr. Farmer in Account with Mr. Garden.

Following is a summation of debits and credits as taken from my books:

Credits.	
Rent of ground	\$5.00
Plowing and harrowing	1.25
Seeds	0.96
Plants (tomato and cabbage) ..	0.45
Thirty-one and one-half hours labor at 15c	4.63
Interest on \$12.28 at six per cent for three months	0.18
Depreciation on hoe (10 per cent)	0.04½
Total cost of production	\$12.50½
Debits.	
Rhubarb	\$0.50
Peas	2.50
Beets	4.30
Radishes	1.10
Lettuce	0.30
Onions	0.60
String beans	4.50
Cucumbers	0.66
Corn	2.48
Tomatoes	4.55
Cabbages	7.48
Parsnips	0.10
Squashes	0.25

Gross valuation

Cost of production

Profit

The above represents a slight profit



A Common Sight this Fall.

but it must not be concluded that if one twenty-fifth of an acre shows a profit of \$16.81½, that one acre will return 25 times as much; it would not be so. With a larger plot, it would have been impossible to give such attention as was given this little garden and the "law of diminishing returns" would begin to be felt.

Moisture Conservation is Keynote to Vigorous Growth.

The corn was planted about 18 inches apart in the rows, with the rows two feet apart. It could not be planted so thick in a large garden. My

neighbors told me that none of the corn would get eatable, but when the pollen was ripe and scattering freely, I walked along the rows with a stick held out horizontally and rigid enough so that the plants were shaken quite vigorously. From the number of ears which were received, the only conclusion is that either the corn would have been fertilized without shaking, or else that the shaking did some good. It probably helped in getting the pollen transferred from the tassels to the silks.

After planting all the early seeds, there was a portion of the garden which I intended to plant to cabbages. This I went over with the weeder every week or so until the cabbages were transplanted. Early in July, 100 cabbage plants were set out on this area and they were set just the same distance as the corn was planted. The ground looked pretty dry to put a cabbage plant into and expect it to grow, and while I was planting a neighbor came out and voiced the opinion that I was wasting my time but the planting went regardless. If a soil mulch will conserve moisture, this plot was moist for it had been kept continually covered with a dust mulch. As a consequence, the cabbages hardly wilted and soon were growing vigorously. When the plants were half-grown, it was almost impossible to see a bit of ground between plants. Last fall, 96 marketable heads were taken from the plot. Besides this



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which is charged for labor it seems very small—the equivalent to three-ten-hour days, but three consecutive ten-hour days would not be the equivalent of the work done in the garden. This comes from the fact that it was worked in the early morning and at night before supper. In the morning after a good night's rest the weeds flew, and at night before supper, they flew again. These conditions helped to minimize the number of hours which were actually consumed in weeding and harvesting the vegetables.

Like M. E. O., "I hope this may encourage more of the farmers' wives to coax John to make a garden for them next year," for it does pay.

Ingham Co. I. J. MATHEWS.

TROUBLE DEPARTMENT.

The Sooty Blotch.

Some of my Spy apples have spots on them which look like scab, but do not go as deep as the scab. It seems to have developed late this fall. Can you tell me what the trouble is?

Cass Co. C. J.

There are several spots on apples that are likely to develop late in the fall. For instance, there is the Baldwin spot and the similar spot on the Jonathan, for which we know no cause and no cure, and then we also have hail spots, which are often mistaken for disease spots. The fact that the spots you refer to are like scab spots but do not affect the skin of the apple, leads us to believe that the trouble is the sooty blotch which is often prevalent on Spy apples.

This trouble is of a fungous nature and develops during the wet spells we have in fall. Some seasons it is quite prevalent but this year fruit generally has been quite free from it. This and the fly speck fungus are of a similar nature, the chief difference being in the size of the spots.

Neither disease attacks the apple proper, but consists of a fungus which subsists on the oily secretions of the skin. Therefore they are troubles which do not seriously affect the keeping qualities of the apples nor do they affect the shape of fruit as scab often does. However, they are detrimental to the appearance of the fruit, and therefore the commercial value of it, as appearance is one of the most important factors when the apple is considered commercially.

The usual sprayings for scab will generally control the blotch but if the season is abnormal, or if the orchard is in such condition that does not permit of a free circulation of air and plenty of sunlight, extra treatment may be necessary.

Many recommend a weak fungicide at the time for the regular spraying of the second brood of the moth, as they believe that the weather for the development of fungous diseases is past. However, considering that this disease may develop any season we think it advisable to use the regular one to forty strength of lime-sulphur for that spraying. If this does not control it then Bordeaux mixture is advisable, as it seems to be a better preventative for this trouble than lime-sulphur. One application at the time the apples are the size of hickory nuts will generally control the trouble.

The Spy is quite susceptible to the blotch, but it is a variety on which this trouble can be easily controlled, as Bordeaux mixture can be used without causing russetting. Baldwin, Greening, Ben Davis, Maiden Blush and Grimes are varieties also affected.

Pruning Raspberry Bushes.

My black raspberry bushes have made considerable growth, and I was thinking of pruning them this fall to keep them from being broken down by the snow.

Oakland Co. C. B.

Fall is not a usual time to prune raspberries, on account of the killing back of some of the growth. If the bushes were pruned at this time of the year it would be necessary to go over

them next spring and cut back the winter-killed portions.

There is no doubt but what the bushes were not trimmed during the summer, otherwise they would not be in the condition as to be broken down by the snow. In the summer, when the young canes attain the height of two and a half or three feet they should be clipped back so as to encourage stockiness and the low branching of laterals and if the laterals are making excessive growth they should also be cut back slightly to make them more stocky. Then in spring the frozen parts should be cut off and the laterals cut back to about six or eight inches in length. All weak canes and those in excess of five to a hill should be cut out. This will leave good stocky bushes and the proper amount of bearing surface for the development of good fruit.

With canes in the condition of yours it will undoubtedly be advisable to cut the laterals back to about a foot in length this fall so that there will be enough left for cutting back next spring should there be a severe freezing back during the winter.

NOTES ON TREE PLANTING.

As they arrive from the nurseryman young fruit trees often have a great deal of fine fibrous roots. This is especially the case when they have been raised in rich, loose soil. By the time they reach the grower most of this fibrous material has dried out beyond recovery; but in any case it is of little if any use to the tree, which establishes itself by throwing out new filaments from the large roots. No hesitation need be felt therefore, in trimming away most of these rootlets. The larger roots must be shortened back and spaced so that they neither crowd nor cross one another and the root system. Long tap roots are not so useful as those that are horizontal. Bruised portions must be removed entirely. In shortening a root it is considered a good plan to make an undercut, so that the cut surface is downward.

Firm planting is essential to success: the soil must be fine and brought into close contact with the roots. Set the trees on a mound of good topsoil in the bottom of the hole, cover the lower stratum of roots, first filling in the interstices, thoroughly when filling in the remainder lift the upper root a little so that they may not be crowded down on the lower ones. When all the roots are covered, tread the soil firmly and fill in, seeing that the tree is not thrown out of the perpendicular or out of line.

Careful treatment of this kind is well repaid, but there are conflicting theories which are at least interesting. The Stringfellow method fully propounded in a book published 12 or 15 years ago, is to cut off all the roots the young tree has made in the nursery, as well as the branches, reducing the tree to a bare stick. This, instead of being carefully placed in well prepared soil, is inserted in a hole made by a bar and tamped in firmly like a fence post. There is no doubt that Stringfellow was successful with this method and his book excited a great deal of interest at the time, but few have had the courage to put it to the test. Then again, Prof. Pickering, at the Woburn Experimental Orchard, England, announced two or three years ago that trees which he had jammed into a hole with no regard whatever for the roots had come on better than those that were carefully planted, the main requirement being that they should be firmly rammed in. Naturally this announcement called forth a deal of criticism, although the facts were not denied. The explanation in both instances appears to be that the roots which a tree makes after it is planted are far more essential than those it is put in with.

Maryland. L. K. HIRSHBERG.

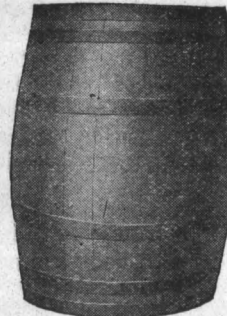
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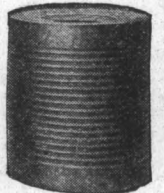
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Grange.

Our Motto—"The farmer is of more consequence than the farm, and should be first improved."

THE GRANGE THAT PAYS ITS WAY.

We should look upon the Grange as a means and not an end. Our devotion to this great order and our work in its behalf, will both be likely to be lacking. In results if we fail to recognize in the Grange, not "The End of Life," but rather a means by which certain great ends may be reached.

Our zeal for the Order should not be a sort of blind service devoid of any definite purpose beyond the present, but we should endeavor to get a constantly clearer vision of what the Grange can do to enrich the life of the community around us, as well as to appreciate its mission in a broader field.

The Grange should pay its way. If it can not be made to do this, it has no claim whatever upon our time and labor. Much will be done to revive dormant Granges and strengthen those that are meeting regularly, when the membership come to believe that they are going to get their pay for what they do for the Order. One of the best reasons in the world why greater results do not follow the efforts of the ordinary subordinate Grange is, that no one is looking for results that are really great.

The first step then, toward making the Grange pay its way, is to get a vision of the possibilities within reach of the organization. Great things rarely come to any of us by accident. If they come at all it is usually because we have looked and planned and worked for them. Great things will be possible in the life of any Grange as soon as its members come to understand the scope and the importance of their work.

The Grange must live by work. A friend said to me some time ago, "You people do not work hard enough for new members. You should send out your deputies like the fraternal insurance orders, and look day after day for members."

But there is a difference. In a fraternal insurance society this is wise just as long as the members can be gotten without too much expense. Every member takes insurance, and though he never attends the meetings, as long as he pays his dues and his assessments, he is worth much more to the society than he would be to an order having many lines of work that must be carried forward in the regular meetings. So, while the getting of new members is an important part of Grange deputy work, it is by no means the only work of the deputy.

There are now more than fifty thousand members of our Order in Michigan. I wish there were a hundred thousand or even more, but still I am sure that it is more important that the fifty thousand we now have should get to work to a little more definite plan, that they should somehow get a clearer vision of the great possibilities of the Order, than that we should increase our membership to the point named.

(Continued next week.)

AMONG THE LIVE GRANGES.

Kent County Pomona to invite State and National Granges. Kent County Pomona held a one-day session with Courtland Grange, on Wednesday, November 4. An invitation was extended by Kent Pomona to the State Grange to hold its 1915 session in Grand Rapids. The Association of Commerce will co-operate in securing an acceptance of the invitation. State Master J. C. Ketcham was instructed to extend an invitation to the National Grange to hold its 1915 meeting in Grand Rapids. He is in attendance at the national meeting, which is in session in Wilmington, Del., this week. It

is hoped that with the aid of the Association of Commerce the national meeting can be secured not later than 1916. Mr. Bierce, secretary of the Association of Commerce, gave an interesting talk in which he showed that the tendency is for business men to go back to the farm. He said that no farmer should look down upon his profession. Professor H. D. McNaughton spoke on "The future of the one-room school-house." He advocated the township high school or the centralized school, or any system which would give equal advantages to country and city boys and girls. H. A. Van Antwerp, editor of the Rockford Register, gave a talk on the "Influence of the Daily Newspaper." He showed that it is an education along financial lines as the farmer can make a study of the crop report. However, he proved the country papers to be of more importance than the city papers. C. R. Allmand tendered his resignation as Master of Kent County Pomona Grange, and T. H. McNaughton, who held the office for ten successive years was elected to fill the vacancy. Chas. Keech also resigned and J. W. Spangenberg was elected secretary. Everyone enjoyed the day to the fullest extent, and the ladies of Courtland Grange served the most appetizing dinner and supper. The afternoon and evening sessions were public, and the music and dialogue were greatly appreciated. All were glad that the Grange makes possible these social and educational gatherings for the rural districts as they are an incentive toward better citizenship.

Farmers' Clubs

THE ASSOCIATIONAL MEETING.

As we go to press the delegates are gathering for the Twenty-second Annual Meeting of the State Association of Farmers' Clubs. Indications point to the usual successful meeting of this organization. A full report of this event will appear in this department of future issues.

BEDFORD FARMERS' CLUB SONG.

MRS. W. R. IRWIN.
Tune:—"Marching Through Georgia."
We're the Bedford Farmers' Club, a jolly lot are we:
From the honored grandsire to the babe upon the knee;
Merry lads and lassies fair, matrons good to see.
All shouting lustily for farm life.

CHORUS:
Hurrah! Hurrah! the Bedford Club are we!
Hurrah! Hurrah! successful we shall be!
So we sing the watchword for the new posterity—
Better, better Bedford farmers.

Bedford boys can grow some corn,
Bedford girls can bake;
(Just as good as mother did) bread,
pies and johnnycake—
When we come to have our fair, you'll see us set the stake.
Better, better Bedford farmers.

Better corn and 'taters, brothers, better wheat and rye,
Better hogs and horses or we'll know the reason why:
Better sheep and poultry, better cows and bees, bye'n bye.
Bedford Farmers' Club will show you.

Better apples, peaches, grapes: better garden truck;
Better roads and rations, homes and schools, don't lose your pluck:
God is blessing daily, work with Him, don't talk of luck,
Better, better Bedford farmers.

CLUB DISCUSSIONS.

Open Club Season.—The first meeting of the season of the Wise Farmers' Club was held in November, at the home of Mr. and Mrs. John Presley, of Herrick. About 60 members and visitors were present, all highly complimenting Mr. and Mrs. Presley as entertainers. The welcome address was given by Mr. Presley in a very pleasing manner. The question for discussion which seemed to be of greater interest than other subjects was the selling of their live stock to cattle buyers. The discussion finally ended by deciding that the farmer should sell his own stock. Four new members were added to the Club list. Election of officers for the ensuing year resulted as follows: President, W. J. Jennings; vice-president, E. F. Wilt; secretary, Arthur Badgley; treasurer, Mrs. Frank Dalton; chaplain, Rew. W. J. Coates; organist, Mrs. Arthur Badgley. The next meeting

will be held at the home of Mr. and Mrs. John Phinsey, of Vernon township, in December.

Discuss National Topics.—The November meeting of Columbia Club, of Jackson county, was held with Mr. and Mrs. E. A. Halliday, of Clinton, with a good attendance. Following the opening exercises the question of the day, "Which is the greatest menace to our nation's prosperity, immigration, liquor or trusts?"

Immigration.—In presenting the subject of "Immigration" Mr. Hewitt said: "The foreigners who come to this country do not improve as they should. The early immigrants helped to make the country what it is, but those who immigrate in these days seek only the financial benefits to be derived, and are in most cases undesirable. A large percentage of our saloons in the large cities are operated by foreigners, and much of the crime is committed by foreigners. Therefore he was not in favor of immigration as it is carried on today."

Liquor.—In speaking of the "Liquor" side of the question, Mr. Dunn first replied to the statements of Mr. Hewitt, saying he was in sympathy with the foreigner, that immigration was a matter of civilization, that foreigners have reason to be grateful for our system of government which makes it possible for them to come here and rear their children, and take advantage of our system of free schools. He also said: "America stands before all nations of the world as a model nation." In treating the liquor question, he said there is nothing in its favor. Mr. Dunn made some comparisons between the tax rate for state purposes, covering a period of years in prohibition Kansas and its neighbor, Nebraska, the figures standing greatly in favor of Kansas.

Trusts.—A. R. Palmer followed with his subject, "The Trusts," outlining the conditions under which they were formed and their benefits to the business world. "In primitive days, when each lived to himself, hunted his own meat, raised his own grain, and supplied his own needs, if they were supplied at all, trusts were not necessary. But the exchange of products and division of labor and general expansion of business called for organization." In speaking of the large business concerns, he named its advantages to itself, viz: It can control prices, secure better terms of transportation, better financial facilities, reduce administration expense and bring profit to the promoter. Its advantages to the public—commodities produced are standardized, and are guaranteed by a reliable company, business is carried abroad, regular market for raw material, less fluctuations in wages and in prices of commodities. To dissolve or destroy the trusts is to take a backward step. Trusts are not a menace to the prosperity of the country, but the best pledge of future prosperity we have."

Entertaining the Young People.—The topic for general discussion at a recent meeting of the Conway-Handy Farmers' Club, was "How can we entertain our young people during the winter?" was discussed by Alton Grant. He referred to his boyhood days in the Grant district; then they entertained themselves. He spoke of the South Conway Literary society, and singing school as aiding in the amusement as well as being a means of instruction. Young people were thrown upon their own resources in that time. Today, because of our compulsory educational laws, our boys and girls are forced out of the homes at an early age. If they want more schooling they must move to town. Thought the farmers had better establish a centralized school in which all grades are taught. In each "little red school" he would place a medium-priced moving picture show. He would arrange to have all the schools in the township in a circuit, there being one moving picture show of comedy and educational reels in each building every week. He would have these shows free. Mr. S. R. Rickett took his wife's place in the discussion. He said that young people should be trained to have a right understanding of the end in view. They should not do that which is detrimental to the health and the mind. School children should not be up nights. Wrong doings of any sort weakens them. Children should be brought up in the fear of God. Mr. Kilpatrick said young people in school have about all they can do to take care of school work without being up nights. They should give more attention to the cultivation of mind and morals than running after so much pleasure. A young man or woman who is fitted with good physical strength, good mind and with the grace of God in the heart will take care of himself or herself.

This Year's Bargain Offer—the Michigan Farmer 3 years for \$1 or 5 years for \$1.50. See page 518.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN ANGUS

Bull calves and yearlings ready for service. Sired by Louis of Viewpoint II. Closely related to five Grand Champions—Brother, Sister, Sire, Sire's Brother and Grand sire. (International Grand Champion for three years in succession. Prices \$75 up. Will meet prospective purchasers either at Somerset, Addison or Addison Junction.

You are bound to get good calves from these bulls even with strongly dairy type grade cows.

GEO. B. SMITH & CO.
ADDISON AND SOMERSET, MICHIGAN.

ABERDEEN-ANGUS

HERD FOUNDED IN 1900.

Strains represented consist of Trojan, Ericas, Blackbirds and Prider only. Black Quality Itto, a bull of rare individuality and merit, heads the herd.

WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. White Leghorn cockerels; Duroc Jersey swine. Michigan School for the Deaf, Flint, Michigan.

BEACH FARM GUERNSEYS

At Three-Fourths to One-Half Price

Owing to the quarantine stopping the moving of cattle, we will contract our young, pure bred bulls at the above discount, to be delivered as soon as the quarantine is lifted. (If the State does not bury them). People who got our price list can verify the above by dropping us a card. All will receive a square deal. Three of these bulls are old enough for service. These prices will not last, better act quick.

CAMPBELL & ANGEVINE, COLDWATER, MICHIGAN.

Gurnseys—Famous May Rose Strain. A select herd. Tub. Tested. Several A. R. O. Cows. J. K. Blatchford, Windermere Farm, Watervliet, Mich.

We have for sale a number of pure Guernsey cows. Heifers and bulls, also Berkshire hogs.

VILLAGE FARM, Grass Lake, Michigan.

Guernsey—Imp. Jim of Edgewater 16384. Age 4 years. Reason for selling is in breeding. Write, JOHN EBELS, R. 10, Holland, Michig-n.

FOR SALE.



Three Fine Young Bulls

8, 9 and 10 months old, from 15, 20 and 20 pound cows, each one giving over 10,000 lbs. milk a year—prices, \$100, \$125 and \$150. The two oldest nicely marked—the other has black back and sides, with some white. DeKol 2nd, H. B. 3rd, and King of the Pontiacs blood.

BIGELOW'S HOLSTEIN FARM
Breedsville, Mich.

FOR SALE HOLSTEIN BULLS

Ready for light service from a 30-lb sire,

rich in the blood of Hengerveld De Kol, Friend Hengerveld De Kol, Butter Boy, and Pontiac Korn-dyke, three his sons, King of the Pontiacs, and Pontiac Aggie Korn-dyke. Pedigrees on application.

ED. S. LEWIS, Marshall, Mich.

HATCH HERD

REGISTERED HOLSTEIN-FRIESIANS

YPSILANTI, MICH., offers HERD HEADERS from choice A. R. O. dams and King Pontiac Jewel Korn-dyke. 50 dams in his pedigree average 31.25 pounds in 7 days. Average per cent of fat of three nearest dams 4.37. Sires in first three generations in his pedigree have 500 A. R. O. daughters. Prices reasonable.

Make your own selection at Ashmoor Farms, Tecumseh, Michigan, R. F. D. No. 2, or address

HATCH HERD, YPSILANTI, MICHIGAN.

For Sale Pure Bred

Holstein Heifers and Bulls.

De Kol and Landry Girl Butter Boy strain.
LEWIS NELLER, - Lansing, Mich.

REGISTERED HOLSTEINS—Herd headed by Albina R. Bonte Butter Boy No. 93124, whose dam has semi-official yearly record. Butter 802 lbs. Milk 18622 lbs. as a 2-yr.-old. No stock for sale. W. B. Reader, Howell, Mich.

75 FOR REGISTERED HOLSTEIN BULL, ready for service, \$35 to \$50 for one month Registered calves. For quick sales.

RIVERVIEW FARM, R. No. 8, Vassar, Mich.

Hazel-Let Herd Sires—Line bred Hengerveld DeKol 30 lb. dam. Line bred Pontiac Korn-dyke 19 lb. 3-yr. dam. Service fees \$50 & \$25. L. M. McLaughlin, Redford, Mich.

"Top-Notch" Holsteins.

Extra large fine young bull, 3/4 white, born Oct. 4, 1913. Dam has official record of 29.40 lbs. butter in 7 days, 17.50 lbs. in 30 days. Sire's dam is a 22.64 lb. 4-yr.-old daughter of a 30.59 lb. cow.

McPHERSON FARMS CO., Howell, Michigan.

FOR SALE Registered Holstein Bulls

ready for service, and bull calves, also females.

FREEMAN J. FISHBECK, Howell, Michigan.

Registered Holstein Bull For Sale—A Grandson of Johanna Korn-dyke DeKol, ELMER E. SMITH, Redford, Michigan.

Holstein-Friesian Cattle. Young bulls ready for service out of A. R. O. cows. Satisfaction guaranteed or money refunded. Jones & Lutz, Oak Grove, Mich.

Holstein-Friesian Breeder—The best families of the breed represented. D. D. AITKEN, Flint, Michigan.

First Draft for \$125 buys two unregistered 10 mos. old Holstein Heifers, crated f. o. b. CHAS. S. RILEY, R. No. 1, Metamora, Mich.

25 LB. HOLSTEIN BULL. Dam record 25 lbs., Her 5 sisters 7 day record 30 lbs.; 30 day record 125 lbs. His sire is son of Pontiac Butter Boy, 58 A. R. O. daughters, 3 above 30 lbs., 26 from 20 to 27 lbs. Mostly white, large, beautiful, attractive, 6 weeks old, \$150 delivered, safe arrival guaranteed. ROBERT W. FAY, Mason, Michigan. P. S. When has such breeding been offered before in this paper?

10 HOLSTEIN BULLS FROM 1 to 3 YEARS OLD

Ten Bull calves, two to ten months old. Ten cows, Your Choice from my entire herd. Don't let anybody make you believe he can sell you a better bull for less money than I can. Don't delay the purchase of bull until the other fellow gets the one you want. Write me or come at once.

L. E. CONNELL, Fayette, Ohio.

ESPANORE FARM, LANSING, MICHIGAN.

OFFERS FOR SALE:

Bull Calf Born Oct. 5, \$75

Write for particulars.
A Few Choice Females for sale.
CHASE S. OSBORN,
ADAM E. FERGUSON, Owners.

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LAPEER, MICHIGAN
Breeder of High Grade Holstein Cattle. Lists and prices upon application.

JERSEY BULL FOR SALE—14 mos. old, can be Reg. Bull and mother won 1st premium at Kalamazoo Fair. Address Albert Kremer, R. 9, Kalamazoo, Mich.

The Jersey

comes into maturity early, is long-lived and is often found making records even to advanced age. She stands above all other breeds for economic production. Shall we mail you free a good book on the Jersey?

THE AMERICAN JERSEY CATTLE CLUB,
324 W. 23d St., New York City.

Lillie Farmstead Jerseys

Bulls ready for service, several from Register of Merit Cows. Four bred heifers, good ones. Herd Tuberculin tested. Prices reasonable.

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Registered Jerseys. Herd headed by Majesty's Wonder No. 90717. Bull calves for sale by Majesty's Wonder and from high producing dams. Also a Grandson of Stoke Fogis of Prospect, Born March 1913. Satisfaction guaranteed. Write for prices. Alvin Balden, Capac, Mich.

CROUSE'S OLD HOMESTEAD JERSEYS

All my surplus Full Blood Jerseys are sold.
J. B. CROUSE, Hartland, Michigan.

Jerseys. Bulls ready for service, extra quality, sired by Jacoba's Fairy Emanon. No. 10711, from high producing dams. SMITH & PARKER, Howell, Mich.

For Sale Jerseys—Heifers from Register of Merit Ancestry, Raleigh—King and Exile of St. Lambert breeding. Also cows with Register of Merit records. Waterman & Waterman, Ann Arbor, Mich.

HOLSTEIN BULLS READY FOR BUSINESS.

World record stock \$100 to \$300. LONG BEACH FARMS, Augusta, Kalamazoo Co., Michigan.

Jersey Bulls for Sale from high-producing dams, with testing Assn. records, also on semi-official test. O. B. Wehner, R. 6, Allegan, Mich.

NOW IN SERVICE—A Son of the \$50,000 sire King Segis Pontiac Alcatraz, GREGORY & BORDEN, Howell, Michigan.

MAPLE Lane Register of Merit Jersey Herd—Tuberculin tested by U.S. Government. For sale, Register of Merit cows, also bulls, bull calves and heifer calves, having from 3 to 7 Register of Merit dams in their pedigrees. IRVIN FOX, Allegan, Michigan.

JERSEYS—For list of stock for sale and Jersey facts write A. P. EDISON, Sec. M. J. C. C., 325 W. Bridge, Grand Rapids, Mich. If a breeder and a member of M. J. C. C. send list of stock for sale to the above.

BUTTER BRED JERSEY BULLS FOR SALE

CRYSTAL SPRING STOCK FARM,
Silver Creek, Allegan County, Michigan.

JERSEYS—YEARLING BULL READY FOR SERVICE. Also bull calves. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

For Sale, Shorthorn Bulls—Red and Roans, by sons of Avondale and Victor Linwood, both International Winners. JOHN SCHMIDT, R. 2, Reed City, Mich.

Shorthorns—Dairy or beef bred. Breeding stock all ages for sale at farmers' prices. C. W. Crum, Secy. Cent. Mich. Shorthorn Breeders' Assn., McBride, Mich.

SHORTHORN BULLS FOR SALE—Red and Roans. Rose Mist gave 10,160 lbs. milk and 518 lbs. butter with first calf in one year. Reasonable price. Write, F. W. Johnson, Custer, Mich.

SHORTHORNS: 6 CHOICE YOUNG BULLS FOR SALE
W. W. KNAPP, Howell, Michigan.

SHEEP.

Rams and Ewes from the first prize flocks of Cotswolds, Leicesters, Lincoln and Oxford Downs; two years old rams and ewes; yearling rams and lambs, either sex. Some of these are unbeaten this year. Harry T. Crandell, Cass City, Mich.

RAMS—SHROPSHIRE OXFORDS AND HAMPSHIRE. Good strong well woolled fellows ready for business. Shipped to you without the money. Isn't that fair? If so write KOPE KON FARM, Kinderhook, Michigan.

Leicesters—Yearling and ram lambs from Champion flock of Thumb of Mich. Also select Berk. shire swine. Elmhurst Stock Farm, Almont, Mich.

POLLED DELAINE RAMS FOR SALE—Big heavy shearers. F. L. BROKAW, Eagle, Michigan.

OHIO DELAINE & MERINOS Three tested stock rams. (B. Type.) Also bred Ewes. S. H. SANDERS, Ashtabula, Ohio.

I AM SOLD OUT of rams but have a few aged, bred, OXFORD-DOWN EWES at farmers' prices. M. F. GANSLEY, Lennon, Michigan.

OXFORD Down Ram and Ewe Lambs, and Reg. Berkshire either sex. Priced to move quick. CHASE'S STOCK FARM, R. 1, Marlette, Michigan.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS. The Sheepman of the East. I sell and ship everywhere and pay express charges. Write for club offer and price list. Charles, Shropshires and Polled-Delaines. PARSONS, Grand Ledge, Mich. R. 1.

Reg. Rambouillet Sheep—Percheron Horses and Pol- and China Hogs, bred from registered stock. J. L. A. SMITH, Morrice, Mich.

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SHROPSHIRE—Young rams and ewes of good quality, sired by imported rams. Prices right. WILLIS S. MEADE, R. 3, Lapeer, Mich.

Registered Shropshire. Yearlings and Ram Lambs. C. G. HAWKINS, R. R. No. 2, Sutton's Bay, Mich.

INOLESIDE FARM offers 14 recorded shropshire ewes of good ages which are being bred to an imported ram. HERBERT E. POWELL, Ionia, Mich.

Yearling Shropshire Rams at prices that are right. W. E. MORRISH, Flushing, Michigan.

REGISTERED OXFORD EWES—\$10 to \$15. Rams all sold. B. F. MILLER, Flint, Michigan.

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Berkshires—Orders booked for sows to be bred for next spring farrowing. Fall pigs \$5 each now. B. B. REAVEY, Akron, Michigan.

Berkshire Boars all sold. Have a choice lot of Aug. and Sept. gilts at Farmers' prices. WHITE OAK FARM, R. No. 4, Brown City, Mich.

ROYALTON BRED BERKSHIRES—Six weeks old pigs, both sexes, registered stock with papers, at farmers' prices. D. F. VALENTINE, Supt., Temperance, Michigan.

Anything in Reg. Chester White Swine. 10 weeks old pigs \$10. Reg. Holstein Herd Bull cheap. RAY B. PARHAM, Bronson, Michigan.

CHESTER WHITES. August and September pigs. from sires as Chickasaw Bud, Modeler, Bronson King. A certificate of registry with each pig. John Gintling, Bronson, Michigan.

HAMPSHIRE Swine—Breeding stock of all ages from most popular strains. Write for breeding. Inspection invited. Floyd Myers, R. 9, Deatur, Ind.

HAMPSHIRE SWINE—Choice young stock for fall breeding, both sexes, prices reasonable. West Wind Farm, Pontiac, Mich. E. P. HAMMOND, Owner. N. A. WISER, Manager.

Two O.I.C. Hogs Weigh 2806 lbs.

Why lose profits breeding and feeding scrub hogs? Two of our O. I. C. Hogs weigh 2806 lbs. Will ship you sample pair of these famous hogs on time and give agency to first applicant. We are originators, most extensive breeders and shippers of thoroughbred hogs in the world. All foreign shipments

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We have bred the O. I. C. Hogs for 51 years and have never lost a hog with cholera or any other contagious disease.

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THE L. B. SILVER CO.
196 Vickers Bldg., Cleveland, O.

O. I. C. Swine—1 stock boar, also 3 and 5 months old pigs from good thrifty stock. Prices reasonable. N. H. WEBER, Royal Oak, Mich.

O. I. C.—Bred sows and spring pigs, large and growthy. Pairs and trios, not akin. Write your wants. GLENWOOD STOCK FARM, Zeeland, Mich.

O. I. C. March, April and May pigs: the big, growthy kind that always makes good. LEMUEL NICHOLS, R. F. D. No. 2, Lawrence, Mich.

O. I. C.—Choice spring boars of March and April farrow. Prices right. JOHN BERNER & SON, Grand Ledge, Michigan.

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We won this year at Ill. State Fair, nine first prizes, four second and five Champions including both Grand Champions; at Wis. we won twelve first prizes, five seconds and all Champions. We have over 700 pigs on hand of every age. All stock is shipped on their own merits. C. O. D. ROLLING VIEW STOCK FARM, R. No. 2, Cass City, Michigan.

O. I. C's—Spring pigs, pairs and trios, no akin, from state fair winners. AVONDALE STOCK FARM, Wayne, Michigan.

O. I. C. Boars ready for service. Also spring gilts, stock recorded in Goshen Ind. H. W. MANN, Dansville, Michigan.

O. I. C. Choice Gilts for Spring Farrow. Not bred. May pigs. Choice serviceable boars the long bodied kind. ALVIN V. HATT, Grass Lake, Mich.

O. I. C's—Serviceable boars weighing 150 to 300 lbs. Prices right to move them. I pay express. G. P. ANDREWS, Dansville, Michigan.

O. I. C's—Fine fall pigs either sex, service boars. Satisfaction guaranteed. A. R. GRAHAM, FLINT, MICHIGAN.

O. I. C.—10 good boars, \$15 to \$25 each. One very choice boar \$30. Registered Gene. C. J. THOMPSON, Rockford, Michigan.

O. I. C's—Large bone kind. Taking orders for September pigs. Shipped O. O. D. J. W. HOWELL, Elsie, Michigan.

O. I. C's—STRICTLY BIG TYPE. For 12 yrs. I have been breeding for size and length with quality. Lengthy Prince one of the largest boars the breed ever produced, heads our herd, assisted by White Monarch and Frosts Choice, 2nd prize under six months boar at Mo. Inter State Fair 1914. Stock for sale at all times, prices reasonable. Address, NEWMAN'S STOCK FARM R. No. 1, Marlette, Mich.

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SOW WEIGHED 932 LBS.
AT 23 MONTHS OLD
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I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U.S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan, "How to Make Money from Hogs." G. S. BENJAMIN, R. No. 10, Portland, Mich.

Duroc Jerseys—15 spring boars and 15 sows; also 60 fall pigs from the principal strains; pairs and trios. S. O. STAHLMAN, Cherry Lawn Farm, Shepherd, Mich.

DUROC JERSEYS—Fall pigs either sex, sows bred for spring farrow and Bronze Tom Turkeys. Bert Sweet, R. No. 1, Hudsonville, Mich.

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From Prize-Winning Stock. Write, or better still, come.

Brookwater Farm, Ann Arbor, Mich., R. F. D. 7.

DUROC JERSEYS, Spring Pigs For Sale
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DUROC BOARS For Sale, breeding right about 175 lbs. April & May farrow \$25 while they last. H. G. KEESLER, R. R. No. 5, Cassopolis, Mich.

Duroc Jerseys—25 choice boars, some fine March gilts and a few bred sows for October farrow. W. C. TAYLOR, Milan, Michigan.

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Duroc Jerseys—For sale, of the heavy boned type, a few choice boars and fall pigs. M. A. BRAY, Okemos, Ingham Co., Michigan.

DUROC JERSEYS—35 fancy boars and gilts of popular blood lines, good individual quality. Special prices for 30 days. JOHN MCNICOLL, Sta. A. R. 4, Bay City, Michigan.

POLAND CHINAS

The Large Prolific Kind
We have a nice lot of **SPRING BOARS**
At Farmers' Prices,
ALLEN BROS

Paw Paw, - - Michigan.

POLAND CHINAS—Spring pigs either sex. From growthy stock and large litters. L. W. BARNES & SON, Byron, Michigan.

LARGE TYPE P. C.—Either sex, pairs and trios, not akin. Am booking orders for bred gilts. W. J. HAGELSHAW, Augusta, Mich.

Big Type Poland China Boars and Gilts plenty of size and great quality. I know I can please you. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

Large Strain P. C.—One extra good fall yearling from large litters of the best breeding; 9 sows farrowing 88 pigs. H. O. SWARTZ, Schoolcraft, Michigan.

POLAND CHINA BOARS—March and April farrow and some summer pigs. Prices right. G. W. HOLTON, R. No. 11, Kalamazoo, Mich.

BIG TYPE POLAND CHINAS For Sale—Spring Gilts by that great 1000 lb. boar, Hillcrest Wonder. They make great brood sows. Have also some splendid fall pigs. HILLCREST FARM, Kalamazoo, Michigan.

For Sale, Poland China Pigs—April and Sept. farrow, either sex. Big point, Carson city. A. O. Shinabargar, Crystal, Mich.

Poland Chinas of the big type. March and April farrow. The kind that please our customers. A. A. WOOD & SON, Saline, Mich.

Poland Chinas, either sex, all ages. Something good at a low price. Bargains in boars ready for service. P. D. LONG, R. F. D. 8, Grand Rapids, Mich.

Poland China Pigs—March and April farrow, large and well grown. Young sows bred for spring farrow. H. H. Conrad, R. 4, Lansing, Mich.

Plum Creek Stock Farm now offer choice heavy boned Duroc Jersey Boars ready for service. Fall pigs, pairs not akin. Also Shropshire Rams. F. J. Drott, R. No. 1, Monroe, Mich.

THE FARMERS' HOG.—Butler's Big Boned Prolific Poland Chinas grow big, keep easy, mature early, ready for market at 6 months. Why? Because we've bred them that way for more than 20 years. 50 lb. boned, long bodied, high class boars at farmers' prices. Buy one and make more money on your hogs. P. O. History Free. J. C. BUTLER, Portland, Michigan.

BIG Type boars by Big Smooth Jumbo. Greatest boar in State, 745 lbs. at 17 mo. These boars are long, tall, big bone, sold at farmers' prices, shipped O. O. D. Call or write. Wm. Waffle, Coldwater, Mich.

LARGE TYPE P. C.—Largest in Mich. Fall pigs all sold, order a spring pig sired by the largest boar in the U. S., weight 900 lbs., 24 months old. Come and see. Expenses paid if not as represented. W. E. LIVINGSTON, Farms, Mich.

LARGE STYLE POLAND CHINA SPRING and FALL PIGS. Dairy Bred Shorthorn Bulls and Oxford Buck Lambs. Prices right. Robert Nye, Pierson, Mich.

MEDIUM type P. O. Boars, one dandy yearling. A few big type sired by Big Smooth Jumbo, priced right. B. J. LANE, R. No. 7, Clare, Michigan.

Yorkshire Swine—We have some nice May pigs, both sexes. Write for description and prices. OSTRANDER BROS., Morley, Michigan.

50 YORKSHIRES—All ages. Red Polled Cattle, Oxford Down Sheep, W. P. Rocks, I. R. Ducks, E. S. CARR, Homer, Mich.

YORKSHIRES

The large, long-bodied, prolific kind. Gilts bred for September and October farrow. A choice lot of spring boars and gilts. Prices reasonable. W. C. COOK, R. 42, Ada, Michigan.

Lillie Farmstead Yorkshires

Open gilts and gilts bred for September farrow. Spring pigs either sex, pairs and trios not akin. Satisfaction guaranteed.

COLON C. LILLIE, Coopersville, Michigan.

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A NEIGHORLY CHAT.

"Good morning, neighbor Jones; what are you going to do with that nice bunch of young cattle I saw in your back pasture this fall?"

"Well, I don't know, neighbor Smith. I intended to sell them about this time of year, but they didn't get as fat as I expected, and now the price is down on account of this foot-and-mouth disease, and now I'll either have to take a loss on them or dry-feed the pesky things, and the trouble is I haven't got enough feed."

"Well, I didn't know how you were fixed, I didn't know but that you might want to sell the bunch of them right out, and as I've got more feed than cattle, I thought I'd make you an offer on them if you wanted to sell."

"What's that?" said Jones. "Why, I thought you had a bigger drove of cattle than I had last summer."

"Oh, I've got them yet," replied Smith, "but I've got lots of feed. I had an extra good crop of corn this year, and the bulk of it is now in the silo. You see, I've followed closely the reports of feeding experiments published in the Michigan Farmer the last few years, and I've found out that it is just as profitable to put corn in the silo for fattening cattle as for dairy cows, so my corn crop goes a good deal further than it used to. I've got plenty of alfalfa hay to feed with this silage. I've been reading all about the experiences of Michigan farmers in growing alfalfa which have been published in the Michigan Farmer. I followed what seemed to me to be the best advice, on a small scale at first, and then in a larger way, until as you know, I have that corner forty into alfalfa, and have a good stand. It cut four tons of hay per acre at three cuttings this year, so you see I have more hay than my stock can eat."

"I've got that nice stock of silage, too, and I'm going to follow the advice given in a recent issue of the Michigan Farmer and feed cottonseed meal with that silage, because cottonseed meal is cheap this year, and it will make an economical feed and help out our brother farmers in the south to some extent."

"I've got a lot of hogs, too, that I grew on pasture this summer, with just enough grain to keep them growing nicely, and I'm going to run these hogs along with the cattle to help make a better profit from the feed. You see, I read last spring in my Michigan Farmer the result of a number of experimental trials with pigs on different kinds of forage crops, and by using some of my alfalfa and sowing a little rape, as advised in this article, I grew these pigs at just about half the usual cost, and I'm going to get at least 50 per cent more out of my corn and hay this year than it is worth on the market, and besides, I will have the fertility left on the farm."

"I tell you, neighbor Jones, that it pays to keep up with the times. It doesn't make any difference what kind of farming we're in, either, whether it is stock feeding, dairying or fruit growing, or any other line, the same thing is true, and if we're going to keep up with the procession, we've got to know what the other fellow's doing and how he is doing it, and the best way to find out is through a trade paper like the Michigan Farmer, published especially to give that information to the farmers of Michigan. I don't know whether you take it or not, but if you don't you are making a mistake. The cost is very small for the benefit derived."

"Well, maybe that is so, Smith. If, as you say, this Michigan Farmer gives actual experiences which might be as profitable to me as they seem to have been to you, I guess I ought to have it, so just send my name in with yours, and I'll read it next year and see if it won't help me as it seems to have helped you."

Michigan Farmer's Club List.

For the benefit and convenience of our subscribers we have arranged the following list of papers on which we can save them money. Besides the money, they save the trouble and expense of sending each order separately.

EXPLANATION.—The first column gives the paper's regular subscription price. The second column price is for the Michigan Farmer and the other paper, both for one year. Add 50 cents when the Michigan Farmer is wanted three years, or \$1.00 if the Michigan Farmer is wanted five years. The third column price is for those who are paid ahead on the Michigan Farmer from one to five years and want the other paper only; such orders must be sent to us direct. All combination orders may be given to our agents or sent to us, as is most convenient.

Any number of other papers may be added at third column prices. Write for prices on publications not listed. We can save you money.

We send sample copies of the Michigan Farmer only.

Mention if you are a new or renewal subscriber. Renewals will be dated ahead from their present date.

Allow monthlies three to four weeks and semi-monthlies two weeks before making complaint, if not received. We forward orders day we receive them.

NAME OF PUBLICATION.	See explanation above.			
Daily, (6 a Week) on R. F. D. only.		\$	\$	\$
Free Press, Detroit. (Both to Jan. 1916).	2 50	2 50		
Journal, Detroit.	2 50	2 50		
Times, Detroit.	2 50	2 50		
Herald, Grand Rapids, Mich.	2 50	2 50		
News, Grand Rapids.	2 50	2 50		
Press, Grand Rapids.	2 50	2 50		
Courier-Herald, Saginaw, Mich.	2 50	2 50		
News, Saginaw.	2 50	2 50		
Tribune, Bay City, Mich.	2 50	2 50		
Blade, Toledo, Ohio.	2 50	2 50		
News-Bee, Toledo, Ohio.	2 50	2 50		
State Journal, Lansing, Mich.	2 50	2 50		
Chicago Herald.	2 50	2 50		
Morning Tribune, Detroit, 1 year: Mich.	2 00	2 00		
Michigan Farmer 3 years.	2 00	2 00		
Tri Weekly Newspapers				
World, N. Y., City.	1 00	1 20	75	
Semi Weekly Newspapers				
Journal, Detroit, Mich.	1 00	1 15	70	
Weekly Newspapers				
Blade, Toledo, Ohio.	1 00	1 00	55	
Commoner, Lincoln, Neb.	1 00	1 05	50	
Enquirer, Cincinnati, O.	1 00	1 05	55	
Produce News, Chicago.	1 00	1 05	60	
Cattle, Sheep, Swine, Poultry, etc.				
American Bee Journal, Hamilton, Ill. (w)	1 00	1 50	60	
American Poultry Journal, Chicago, (m)	1 00	1 20	75	
American Poultry Advocate, Chicago, (m)	1 00	1 35	80	
American Sheep Breeder, Chicago, (m)	1 00	1 35	80	
American Swineherd, Chicago, (m)	1 00	1 35	80	
Breeders' Gazette, Chicago, (w)	1 00	1 45	95	
Poultry Weekly, Boston, Mass.	1 00	1 30	85	
Fruit Belt, Grand Rapids, Mich.	1 00	1 20	75	
Green's Fruit Grower, Rochester, N. Y.	1 00	1 20	75	
Hoards' Dairyman, Fort Atkinson, Wis.	1 00	1 20	75	
Jersey Bulletin, Indianapolis, Ind. (w)	1 00	1 35	90	
Kimball's Dairy Farmer, Waterloo, Ia. (s-m)	1 00	1 05	75	
National Sportsman, Boston, Mass. (m)	1 00	1 15	70	
Poultry Keeper, Quincy, Ill. (m)	1 00	1 15	70	
Poultry Pointers, Grand Rapids, Mich.	50	70	25	
Poultry Success, Springfield, O. (m)	50	75	25	
Reliable Poultry Journal, Quincy, Ill. (m)	50	80	35	
Swine Breeders' Journal, Indianapolis, Ind. (s-m)	50	80	35	
Popular Magazines.				
Everybody's Magazine, N. Y. City. (m)	1 50	1 60	1 15	
Etude, Philadelphia, Pa. (m)	1 50	1 60	1 15	
McClure's Magazine, N. Y. City. (m)	1 50	1 60	1 15	
Musicalian, Boston, Mass. (m)	1 50	1 60	1 15	
People's Home Journal, N. Y. City. (m)	1 50	1 60	1 15	
Red Book Magazine, Chicago, Ill. (m)	1 50	1 55	1 10	
Review of Reviews, N. Y. City. (m)	3 00	3 00		
Ladies' or Household.				
Delicater, N. Y. City. (m)	1 50	1 60	1 15	
Designer, N. Y. City. (m)	75	1 05	60	
Housewife, N. Y. City. (m)	50	80	35	
Ladies World, New York City. (m)	1 00	1 15	70	
McCall's Magazine, N. Y. City. (m)	50	75	30	
Mother's Mag., Elgin, Ill. (m)	50	75	30	
Pictorial Review, N. Y. City. (m)	1 00	1 00	60	
Woman's Home Companion, N. Y. City. m	1 50	1 60	1 15	
Woman's World, Chicago. (m)	35	60	15	
Today, Chicago (m)	50	70	20	
Religious and Juvenile.				
American Boy, Detroit Mich. (m)	1 00	1 00	55	
Boys Magazine, Smethport, Pa.	1 00	75	20	
Little Folks, Salem, Mass. (m)	1 00	1 20	75	
Young People's Weekly, Elgin, Ill. (w.)	75	85	50	
Youths Companion, Boston, Mass.	2 00	2 25	2 00	

NOTE.—If the Michigan Farmer is wanted 3 years add 50 cents to the second column price, or \$1 if wanted five years.

We have made up these clubbing combinations solely for the benefit of our subscribers, believing same would be appreciated by them. We have tried to exclude all trashy publications with little or no merit.

We have urged publishers to make us a low rate, emphasizing the fact that our subscribers are of the better class of farmers, who would make a valuable addition to their list of readers. In this way we have secured very low prices, the advantage of which we are giving our subscribers by making up clubs at cost to us, adding nothing for the attendant expense of copying, forwarding, etc. At the same time we wish it understood that none are in any way under obligations, as we are getting full price for the Michigan Farmer, while the saving made through these combination offers will

result in many new subscribers, inasmuch as our friends will make these offers known to their neighbors by calling their attention to them.

We have no hesitancy in asking our readers to do this, knowing from past experience that it will be done cheerfully when it is convenient. Very often our friends make a special trip to a neighbor's and get their order. In such cases, we have a lot of good substantial articles we offer for two or more subscribers. This list we will send either before or after the order reaches us.

When it is preferred, we pay a substantial amount in cash in place of the article. We expect and are glad to remunerate our friends for any trouble they may take in thus looking after our interests. Of course, their own subscription counts one in the

SPECIAL BARGAIN COMBINATIONS.

We have arranged here a list of special bargain combinations which will save you considerable on your reading matter. No substitution of other magazines which are the same price can be made. You must take the entire combination just as it is. You can make up your own club from the club list if none of these suit you, or add to any of these others at third column club list prices.

NOTE.—The Michigan Farmer is figured in all combinations at three years, price \$1. All others are for one year only. If the Michigan Farmer is only wanted 1 year deduct 50 cents from the combination price, or if the Michigan Farmer is wanted five years add 50 cents. The other paper alone can be had from us another year at a reduced price.

Orders may be sent direct to us or through any of our agents.

Order by number. Address all orders to the Michigan Farmer or hand to our agents.

EXPLANATION.—Wk. means the paper comes each week, mo. means each month, S.-mo. semi monthly. Dailies on R. F. D. only.

<p>No. 1</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 The American Boy, mo. 1.00 The Ladies' World, mo. 1.00</p> <p>Regular price \$3.00</p> <p>OUR PRICE ONLY \$2.00</p>	<p>No. 8</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Poultry Pointers, mo.50 Boys' Magazine, mo. 1.00 McCall's Magazine, mo.50</p> <p>Regular price \$3.35</p> <p>OUR PRICE ONLY \$1.75</p>
<p>No. 2</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 The American Boy, mo. 1.00 Woman's World, mo.35 Poultry Pointers, mo.50</p> <p>Regular price \$2.85</p> <p>OUR PRICE ONLY \$1.75</p>	<p>No. 9</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Choice of either: The Breeders' Gazette, American Sheep Breeder, Hoards' Dairyman 1.00 Poultry Success, mo.50 Boys' Magazine, mo. 1.00 Ladies' World, mo. 1.00</p> <p>Regular price \$4.50</p> <p>OUR PRICE ONLY \$3.00</p>
<p>No. 3</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Kimball's Dairy Farmer, S.-mo. 1.00 The Ladies' World, mo. 1.00</p> <p>Regular price \$3.00</p> <p>OUR PRICE ONLY \$2.00</p>	<p>No. 10</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 To-Day's Magazine50 Choice of one May Manton Pattern (see this issue). Poultry Pointers, mo.50 Boys' Magazine, mo. 1.00</p> <p>Regular price \$3.00</p> <p>OUR PRICE ONLY \$1.50</p>
<p>No. 4</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Pictorial Review, mo. 1.00 Boys' Magazine, mo. 1.00</p> <p>Regular price \$3.00</p> <p>OUR PRICE ONLY \$2.00</p>	<p>No. 11</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Any Detroit Daily (except the News) 2.50 American Swineherd, mo.50 Hand Book on the Sow50 Poultry Success, mo.50 Kimball's Dairy Farmer, S.-mo. 1.00</p> <p>Regular price \$6.00</p> <p>OUR PRICE ONLY \$4.00</p>
<p>No. 5</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Youth's Companion, wk. 2.00 McCall's Magazine, mo.50 Poultry Pointers, mo.50</p> <p>Regular price \$4.00</p> <p>OUR PRICE ONLY \$3.00</p>	<p>No. 12</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Any Grand Rapids Daily 2.00 Fruit Belt, mo.50 Kimball's Dairy Farmer, S.-mo. 1.00 Poultry Pointers, mo.50</p> <p>Regular price \$5.00</p> <p>OUR PRICE ONLY \$3.50</p>
<p>No. 6</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 The American Boy, mo. 1.00 McCall's Magazine, mo.50 Poultry Pointers, mo.50</p> <p>Regular price \$3.00</p> <p>OUR PRICE ONLY \$1.90</p>	<p>No. 13</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Morning Tribune, Detroit Daily.. 2.00 Poultry Pointers, mo.50</p> <p>Regular price \$3.50</p> <p>OUR PRICE ONLY \$2.15</p>
<p>No. 7</p> <p>Michigan Farmer, 3 yrs., wk. \$1.00 Woman's World, mo.35 Poultry Pointers, mo.50 Fruit Belt, mo.50 Boys' Magazine, mo. 1.00</p> <p>Regular price \$3.35</p> <p>OUR PRICE ONLY \$1.50</p>	<p>ATTENTION.—On any one of these combinations you save the price of the Michigan Farmer three years and on some considerably more.</p>

club. Please do not be backward in writing us for this list for clubs, or when you send us an order for one or more subscribers, either new or renewals, ask for the list from which to make your selection. It will be sent by return mail and the articles you select, or the cash, as you prefer, will be sent immediately we get your choice.

If any of our readers have time to give their neighborhood a thorough canvas, we have regular terms and supplies which we will be glad to send free on application.

A COMPARISON.

A monthly farm paper, to be as cheap as the Michigan Farmer at 50 cents a year, would have to sell for 12½ cents a year, and a twice-a-month farm paper to be as cheap would have to sell for 25 cents a year. Markets, veterinary advice and other features would be of the same comparative value.

WILL YOU ACCEPT A CHRISTMAS GIFT FROM US?

160 Separate Pieces, a Beautiful Colored Selection

Consisting of { **Merry Christmas and New Year Post Cards,
Christmas Greeting Stickers and Cards,
Autumn Leaf Stickers, Tags, Labels, etc.**

Including a Four Panel American Beauty 1915 Calendar in Colors ^{22 x 3 1/2} Inches

These articles bought separately would cost about \$1.00.

Your Christmas gifts will not be complete without these beautifully engraved Holiday selections, enough for the entire family.

This Fine Assortment Given to Every Subscriber

not as a premium because our subscription price is low enough without giving a premium with the paper—and right here let us ask you if the Michigan Farmer is not a better value today than when we charged \$1 a year and threw in a premium; is it not?

We ask a very slight accommodation in return

Only This—Send us your renewal orders so that they will reach us on or before **December 20th**. We will mail you postage paid, this beautiful selection, including the beautiful calendar, after your order reaches us in return for your kindness in sending your order early; send it **now** as soon as you read this, whether it is—

**50 CENTS FOR ONE YEAR or
\$1.00 FOR THREE YEARS or
\$1.50 FOR FIVE YEARS.**

or any of our combination clubs with other papers. (See preceding page.)

This is the Proposition:

We will send this 160-piece selection to **every** subscriber whose order we receive from this date to **December 20, 1914**,—whether it is for 1, 3 or 5 years, whether sent to us direct or through an agent, whether it be a new subscriber or a renewal—whether

in combination with any of our clubbing offers, it makes no difference. All we care is that the orders reach us on or before **December 20th**.

You Will Find an Envelope Subscription Blank

in this issue of the Michigan Farmer. Use it in sending your order; we will guarantee its safe arrival, providing it is properly sealed and stamped with a two-cent stamp. The handiest amount to mail is a **One Dollar Bill**. It will get you the Michigan Farmer for **3 years, 156 issues**.^

One Dollar and a Half will pay for 5 years, 260 issues, to one person, or 50c for one year, 52 issues, and all combinations at prices at which they are offered. Large remittances should be sent by post office or express order or check.

Take a thought for your neighbor—Take on the Christmas spirit and tell your neighbor of this wonderful offer. Tell him about the Michigan Farmer and say you will send his order with yours. Don't forget that a year's subscription to the Michigan Farmer makes as fine a Christmas gift as you can give—a 52 time reminder.

Don't forget the date—December 20th

In order to get the 160-piece selection free, it must be mailed on or before December the 20th. But **Friends don't wait** until the 20th. Send your orders **at once, please**.

We will probably get 40,000 orders in December and if you will start sending your

orders at once, we can handle them nicely without mistakes. It makes no difference when your present subscription expires. Your new order will date from the present one. If you are paid up for a year or two yet, and want to order for three or five years longer, your date will be set that long ahead.

Tell your friends about this offer. Please send your orders NOW.

I'll Rid Your Stock of Worms

I'll Prove It Before You Pay



I Want You to Know The Value of SAL-VET

—I want you to feed it at my risk—I want to prove to you on your own farm that SAL-VET will rid your stock of worms, put them in healthy condition, easier to keep on no more feed—more profitable in every way—and less liable to disease. I don't want you to send me a penny in advance—just mail the coupon. I'll ship the SAL-VET just as agreed, let you feed it 60 days—and if it does not do what I claim, then I'll cancel the charge. Is not that a fair, open offer?

READ!

"Before I started to feed SAL-VET my hogs were sick, and I had lost six of them, since feeding SAL-VET I have lost none, although some of them were pretty sick before they had access to SAL-VET and had lost their hair. However, they pulled through all right and now have good appetites and are thriving."

ERNEST TRIEBEL,
Route No. 2, Clearwater, Minn.

"After feeding SAL-VET to sheep, hogs, horses and cattle during the past winter, and found it a reliable conditioner and worm destroyer. My stock never looked so healthy and thoroughly conditioned as now."

U. H. SUMMER,
Brownville Jct., Maine.

"My hogs are doing finely; have kept SAL-VET before them for two months and while there has been lots of disease amongst hogs in this section, none of mine have been sick."

GEO. A. ELINE,
Route No. 20, St. Matthews, Ky.

"I have fed SAL-VET to all my stock; it has put them in fine condition, and improved them wonderfully. The cholera has been killing hogs all around my home, but I have not lost a single one. I have never used so effective a remedy."

SANFORD GERST,
South Boston, Va.

"I enclose check in payment of the SAL-VET sent recently. Four times this sum would not begin to pay for the benefit I derived from feeding SAL-VET."

W. H. WALLACE, Franktown, Va.

"I have great faith in SAL-VET. Since feeding it, I can certainly see a great improvement in my stock. I have fed a number of different stock foods and remedies, but have never found any as good as SAL-VET. I am recommending it to my neighbors and others who lost hogs with the cholera."

C. G. FIELD, Hiawatha, Kansas.

READ!

"I am feeding SAL-VET to 750 lambs and about 100 hogs. During this time there has been no sickness whatever among this stock. I consider SAL-VET cheap insurance."

THOS. J. LILLY, Wheeling, Mo.

"SAL-VET is certainly a great medicine. I have been feeding it all winter, so far and since I started, my stock are better than ever before."

ALBERT MEANS, Walthill, Nebr.

"Have been feeding SAL-VET to some of my horses which were very thin and in a run-down condition. They have now picked up in flesh and spirits in spite of the heavy work incident to this time of year."

ELI FURLAND, Artesian, S. D.

"I had a yearling colt which was not doing at all well. I had fed turpentine, tobacco and other worm remedies, but all failed. On the evening of the 19th of February, I gave this colt a dose of SAL-VET and the following day I had plenty of evidence of its value. It is doing the work, all right."

HARRY BRENNEMAN,
Rt. No. 5—Ottawa, Ohio.

"I am well pleased with SAL-VET. I never knew a horse could have so many worms and live. SAL-VET surely brings them—big and small. Horses to which SAL-VET is fed, act 100 per cent better, and what we formerly thought was colic and meanness, was nothing but worms and worms."

J. E. TERKEURST,
271 Dauphin St., Mobile, Ala.

"The more I use SAL-VET the better I find it. My sheep and hogs were never so thrifty and healthy as now. We butchered this week, and did not find a single worm, while our neighbors' hogs are wormy and dying. I have been recommending SAL-VET to them and they are now ready to use it too."

WESLEY CHAMBERS, Bussey, Ia.

SAL-VET

The Great Worm Destroyer

REG. U.S. PAT. OFF.

The Great Live Stock Conditioner

—is the medicated salt which contains no antimony, fed just as you would feed common salt. There is no dosing—no drenching—no trouble—all animals need it—take to it readily—and so doctor themselves. You will find animals that you do not suspect of having worms just full of them. Stock that have been run-down will take on new vigor, grow thrifty and profitable. Stock kept free from worms will be healthier; will do better, act better, and be in better condition to resist dangerous diseases. As proof of this read a few of the thousands of letters from stockmen who feed SAL-VET—who depend on SAL-VET to help them make greater profits—and to prevent loss.

Fill Out the Coupon Below Today

You take no risk whatever in accepting this no-money-down offer. Just fill out the coupon, tell me how many head of stock you have, and I'll ship enough SAL-VET to last them 60 days. You simply pay the freight charges on arrival, and when the 60 days are up, report results. If SAL-VET has not done all I claim, then I'll cancel the charge, and you won't owe me one penny. Address

Sidney R. Feil, Pres.
THE FEIL MFG. CO., Chemists
Dept. MF Cleveland, Ohio

Send No Money—Just the Coupon

THE FEIL MFG. CO., Dept. MF 12-5-14 Cleveland, O.

Ship me enough SAL-VET to last my stock 60 days. I will pay the freight charges when it arrives, agree to report results promptly in 60 days and at that time pay for it if it does what you claim. If it does not, you are to cancel the charge.

Name

P. O.

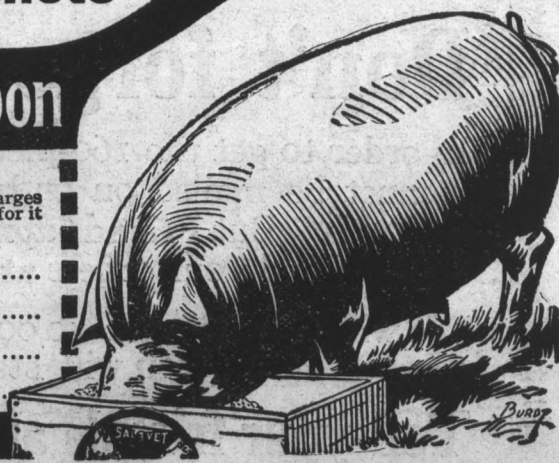
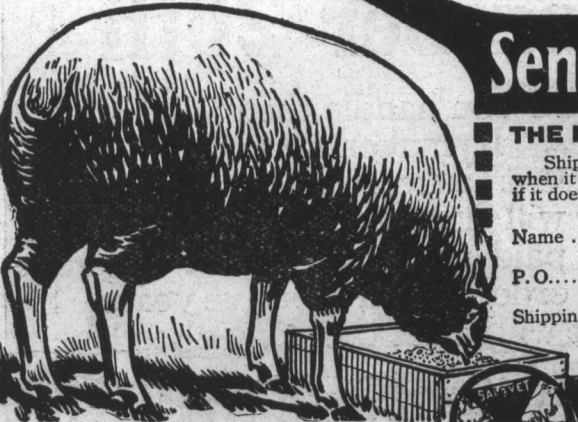
Shipping Station..... State.....

Number of Sheep..... Hogs..... Cattle..... Horses.....

PRICES

40 pounds.....	\$ 2.25
100 pounds.....	5.00
200 pounds.....	9.00
300 pounds.....	13.00
500 pounds.....	21.12

No orders filled for less than 40 lbs. on this 60 day trial offer. Never sold by peddlers nor in bulk; only in Trade-Marked SAL-VET packages. Shipments for 60 days' trial are based on 1 lb. of SAL-VET for each sheep or hog, and 4 lbs. for each horse or head of cattle, as near as we can come without breaking regular sized packages.



Look for this Label
on all SAL-VET packages. Don't be deceived by imitations. Don't buy "Sal" this or "Sal" that. Get the original genuine SAL-VET.