

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY.
ESTABLISHED 1843.

The Only Weekly Agricultural, Horticultural, and Live Stock Journal in the State.

VOL. CXXXVII. No. 4.
Whole Number 3557.

DETROIT, MICH., SATURDAY, JULY 22, 1911.

\$1.00 A YEAR.
\$2.75 FIVE YEARS.

FARM NOTES.

Spraying Potatoes for Blight.

What is the cause of potato blight, and is there a remedy? If so, will you please answer through the next paper if possible?

Kalamazoo Co.

C. W. D.

The above is but one of several similar inquiries recently received in regard to potato blight. As has been often explained in our columns in previous years, potato blight is a fungous disease which attacks the potato plant, proving very destructive under weather conditions which are favorable to its development. Its occasional wholesale damage or destruction to the crop is due to the fact that the life cycle of the fungus is completed within four or five days, so that wherever the disease is present in a field there are always plenty of spores so that its general development is very rapid when the weather conditions favor it. Oftimes it may be present in a field without being noticed until a spell of muggy, cloudy or wet weather occurs, with a comparatively even temperature for several days, when whole fields are often killed down within a week by the general and rapid development of the disease. Humid, still weather, with a temperature of about 73 degrees is most favorable for the development of the spores, which enter the leaves through the stomata or breathing pores, or penetrate the cell wall, where they grow and appropriate the nourishment which should go to the plant, completing their life cycle and bearing more spores within a few days as above noted. When the temperature is above 78 degrees or below 50 degrees Fahrenheit, there is practically no germination of the spores, and when the temperature is variable, as it is in a normal season, the development of the disease is retarded thereby. But occasionally there will be a year when there will be several days of cloudy, rainy weather in August or September, during which the conditions are constantly favorable for the development of the disease, under which circumstances the greatest damage is done to the potato crop. For this reason the weather conditions have a great deal to do with the serious prevalence of the disease, which doubtless accounts for the fact that it does little damage most seasons and almost none in others, while in other years it is general and destructive, since there are doubtless enough spores present at all times to infect practically every field when the conditions are right for their development.

It has been thoroughly demonstrated that while there is no remedy for this disease, once it has attacked a plant, it can be largely, if not entirely, prevented by thorough spraying with Bordeaux mixture. The theory is that by the spreading of a thin film of the copper compound over the surface of the leaves, the entrance of the spores into the leaves is either prevented or their vitality injured. It will thus be seen that the degree of immunity secured will depend upon the thoroughness and frequency of the spraying. To be wholly immune the spores must be prevented from gaining access to the plants, as they will develop once they gain an entrance into the leaves or stems. Thus it is necessary to practically keep a coating of copper spread over the plants at all times, which necessitates frequent spraying to protect the new growth. As a preventive measure for the late blight, which is the most destructive to the late crop, the spraying should be commenced when the plants are about six inches high, which, with the later planted fields will be about the first of August. The spraying should be repeated in from one to two weeks, ac-

ording to weather conditions, until the crop nears maturity. This will require from three to six applications, and as immunity is secured only through thoroughness, the work should be thoroughly done if it is attempted at all.

A good many growers who are aware of the ever impending danger of loss from the ravages of this fungous pest, and who are fully advised as to the protection which may be secured by thorough spraying, seem to think the price of immunity is too high and prefer to take the chance of loss from the disease. It is, however,

a year like the present, at least, when the early potato crop is a practical failure throughout the country and when the average condition of the growing crop on July 1 is the lowest for 22 years, there should be no doubt in the mind of the progressive potato grower that it will pay to spray the late crop for the prevention of late blight.

The strength of the solution usually used for potatoes is six pounds of copper sulphate to 50 gallons of water, with four to six pounds of lime added to neutralize the caustic effect of the chemical. For

of lime does no harm so far as the efficiency of the mixture is concerned, it is apt to cause clogging of the spray nozzles. For this reason it is better to test each batch of mixture to determine the sufficiency of its lime content. A cheap and efficient test may be always at hand by purchasing ten cents' worth of ferrocyanide of potassium (yellow prussiate of potash) at the drug store. This should be dissolved in water and the bottle in which it is kept labeled "poison." After mixing up and thoroughly stirring a batch of the mixture in the spray tank, dip out a small sample and add to it a drop or two of the test mixture. If the mixture is discolored where it is dropped in, add more lime, if not the lime content is sufficient, although it is always best to be well on the side of safety. The writer has for several years used a mixture of this strength without harm to the potatoes. In recent years some experiments have seemed to demonstrate that four pounds of copper sulphate to 50 gallons of water is sufficient, but here again it would appear to be the part of wisdom to keep on the safe side by making the mixture rich enough to give a maximum of protection. However, this will depend somewhat upon the capacity of the sprayer, and the amount of liquid which is applied per acre.

As above noted, the application of Bordeaux mixture has uniformly increased the yield where accurate checks have been kept as compared with unsprayed plots at the experiment stations. It is not necessary at this time, to comment upon the theory of this increase, since it is interesting from a scientific standpoint only, and theories are not needed where demonstrated facts are at hand.

Early Blight of Potatoes.

Please advise in your columns if early potatoes which are badly blighted or burned in the foliage, should be dug immediately. Will any added harm come to the tubers by leaving them in the ground a week or two? So far as I have dug, the blight seems to have come too late to really spoil the crop.

Berrien Co.

R. G. B.

Without doubt the trouble with these potatoes is early blight, which is essentially a leaf disease, and does not attack the tubers directly and never causes them to rot, as does the late blight above described. This is also a fungus disease which appears earlier in the season than the late blight, usually in June or July, and it develops and spreads in warmer, drier weather than the late blight. The characteristic effect of the early blight is the formation of circular brown spots with target-like markings on the leaves. As with the more destructive late blight, the spores enter the plant through the stomata or breathing pores of the plant, but more often through tissue weakened by flea beetles or other insect agents. Spraying with Bordeaux mixture is also effective against this disease, although not as generally practiced as for late blight since the disease is not so destructive in character. In ordinary seasons the selection of vigorous varieties and the giving of liberal fertilization and thorough tillage to produce strong plants will furnish a degree of immunity from this disease.

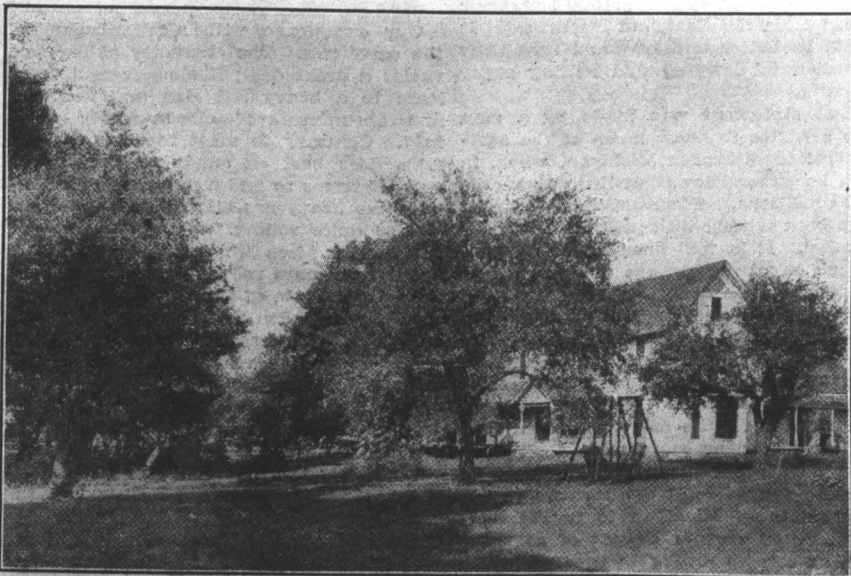
Since this disease does not attack the tubers, causing rot, as does late blight, there need be no fear of the potatoes being damaged by a reasonable delay in digging them, although it is better to dig soon after the tubers ripen. In this connection, it would be well to observe that while the late blight may attack the tubers in the ground before digging, it is the opinion of scientists who have made a thorough study of the proposition that it is better not to dig potatoes affected with late blight until ten days after the



Beans Growing on the Farm of Chas. B. Page, Emmet County, Mich.

a well demonstrated fact that frequent spraying with Bordeaux mixture has a beneficial effect upon the potato plant, and that this effect is sufficiently pronounced to make the spraying a paying proposition in any season when the tubers bring a normal price, even though the blight may not be troublesome. At the Geneva experiment station in New York, an accurate check has been kept on 304 experiments made during the last eight years on the experiment station farm which shows an average gain in yield through spraying of 45 bushels per acre. Last season gave this theory a severe test, since the blight was not very prevalent and did not attack the crop until late in the season where it occurred, yet 16 out of the 19 tests reported in the annual potato-spraying bulletin of the station (No. 338) showed spraying to be profitable through the increased yields secured. Thus it would appear that, in

convenience it is better to have the ingredients at hand in the form of stock solutions. The copper sulphate may be dissolved in water by hanging it in the top of a barrel of water in a burlap sack. Water will dissolve about three pounds of the copper sulphate to the gallon, which makes what is termed a saturated solution. The lime can be slaked in a barrel or other convenient vessel, and will retain its caustic properties so long as it is in a thick paste, and is not permitted to dry out. Then, in making the solution the stock solution can be measured out to get the proper amount for filling the spray barrel or tank. This should be added to about half the quantity of water needed, and the lime paste should be diluted with the balance of the water required and strained into the spray barrel or tank and the whole well mixed. It is important that sufficient lime be added, and while an excess



Farm Home of E. H. Atwater, of Ganges Township, Allegan County, Mich.

Mr. Atwater writes that he has taken the Michigan Farmer continuously since 1844, and that he can show a copy of the paper for every year since that date.

vines die, then get them out of the field as soon as dug, and never covering piles of the tubers with the spore-laden vines, as is sometimes done. Where this course is followed it will be possible to detect most of the affected tubers when dug, and there will be less danger of the general infection of the sound stock.

PASTURES, CATCH CROPS, AND COVER CROPS.

Editor Waterbury, in his opening article upon this subject in the issue of July 8, has so completely expressed my views upon this important question, especially of pastures, that it seems somewhat out of place for me to attempt to write an article upon this subject. I have advocated some of these ideas so persistently that he brings out perhaps more clearly than I have, that nearly every reader of the Michigan Farmer understands my opinion about pastures. I do not believe we can afford anything only a permanent pasture, and this only upon land that is in no condition for profitable tilling. For instance, land that is too rough to plow, work, and raise crops upon is good for nothing only permanent pasture. New land that contains too many stumps and only partially cleared land, something of that sort can be used with profit as a pasture. But fields that we have tile drained, fields that we have kept up to a maximum state of fertility, I do not believe can be profitably used as a pasture. I realize that the labor question is getting to be a very important one, and that this must be taken into consideration in shaping the policy for the amount of pasture upon our farms, but even with the present status of the labor problem, I do not believe we are warranted in pasturing our work fields. We can raise so much more to the acre and feed it with so much greater results, where it is properly harvested and stored in the barn, than we can possibly get from the same acreage if devoted to pasture that the labor question really sinks into insignificance when we realize it.

Undoubtedly, in some other countries and perhaps in some sections of our own country the problem is a little bit different one. In England, for instance, which has a much more humid climate than we have, and less sunshine, where they cannot raise a magnificent corn plant, and where perhaps grass grows more naturally and more luxuriantly, they are warranted in depending more largely upon the pastures than we are, but in our states, where pastures dry up in July and August and all growth is practically stopped, it does not pay to keep a field that will grow a good crop of corn or a good crop of clover hay or alfalfa into permanent pasture, because the first crop we harvest is largely wasted and because we cannot depend upon the pasture with any degree of accuracy. Of course, I know that where one is raising a large amount of young stock it is almost impossible to keep them in the barns and yards all the while. They can be turned to pasture and one can always find some corner of his farm that is not suitable for tillage that he can properly fence and keep for a permanent pasture so that he can take care of his young stock in this way without pasturing the best soil on his farm. Of if he hasn't it on his own farm he can rent a pasture or he can buy some waste land in the neighborhood or nearby for a permanent pasture and reserve the good land on his farm, the level land, for the raising of crops and thereby make more money than he can by devoting them to pasture.

I am of the opinion that in the near future we are going to take more pains with our pastures than we have in the past, even on our rough land and our permanent pastures. We are going to realize that manuring them in some way or another is just as beneficial as it is to manure the corn crop or the wheat crop. Pastures run out, become exhausted, fail to yield anywhere near a maximum yield simply because we have taken crop after crop, year after year, off from these fields and put nothing back. Last year the manure which we made during the summer time, which, by the way, is considerable, because we keep our herd of 50 cows in the barn every night, was put upon the horse pasture, that is, upon all of the poorer places, of course the low places that were inclined to be wet, and where some wild grasses grew, we did not manure. But the higher portions of the field were top-dressed during the summer with stable manure directly from the barn. Now, it is wonderful to notice the growth of pasture grass upon this field this year. Judging

from the appearance, the yield this year is fully twice as much as it was last year. This year we are putting the manure on the poor places in the cow pasture. We won't be able to get over the whole of the cow pasture because that is a larger field, but we are going to put it all through the summer upon the poor places. It is pretty rough and hilly and one has to go with a load of manure over knolls and on side hills where he would hardly think that he could go, but you can get there if you try, and a good coat of stable manure spread upon a naked side-hill will cover it with green grass next year. Our manure this summer is especially valuable for the improvement of worn out pastures because we are using as an absorbent in the stable, as a trap for the nitrogen to prevent its loss, quite a liberal supply of acid phosphate. We are using in the cow stables, calf pens, and the horse stables, about 50 lbs. of acid phosphate, 14 per cent goods, every single day. Now this all goes out onto the poor places in the cow pasture and that, taken in connection with the stable manure, makes one of the most valuable dressings that we could have for cow pasture.

Several years ago on one bare clay knoll in the permanent pasture, on land that I had just purchased, I put quite a good supply of bone meal and it was a wonderful improvement that this dressing of bone meal made upon this poor place. It came into white clover and red clover, and the June grass grew much more luxuriantly and it was noticeable to anyone. A liberal application of phosphate fertilizer on a pasture will bring in the clover to such a degree that it will almost astonish one.

Catch Crops.

Catch crops are crops that one used to fill in a rotation when the regular crops in the rotation, for one reason or another, have been a failure. For instance, if one's rotation is clover, corn, oats, and wheat, and for any reason any one of these crops have failed and we substitute another crop, that crop would be called a catch crop. This year I am growing a crop of ensilage corn that is a catch crop. The regular crop in the rotation was oats, but owing to local conditions I lost the oat crop, having the seed rot in the ground, and I plowed it up and planted it to ensilage corn. Many times a farmer has to use his ingenuity to get a catch crop that will fit in and take the place of some crop that has failed in the rotation.

Cover Crops.

Everybody realizes the importance of cover crops. The necessity of keeping the land covered with some growing crop as much of the time as possible, should be generally appreciated, and in planning the rotation this question should be taken into consideration, so as to not leave any of the fields bare at any time of the year, either winter or summer, where it can be prevented.

COLON C. LILLIE.

GROWING WHEAT IN MICHIGAN.

It must have surprised many of the farmers of Michigan, when they read in the commercial press some of the quotations from an address delivered by Leon James Wilson, secretary of agriculture, Washington, D. C., when he was the guest of the Board of Commerce in the city of Detroit a short time since. He was reported to have said: "The farmers of Michigan ought not raise a bushel of wheat; they might better buy their wheat from the Canadian Northwest. It would be better if they would turn their attention to dairying and raising sugar beets."

That statement was made by a man who assumes to know much of the agricultural conditions in Michigan, when, in fact, he either knows but little about the real conditions, agriculturally, or he must have been talking with political influences in mind. It is well known that all conditions on our farms are not adapted to carrying on the dairy business; the location and the character of the soil are not such as would be necessary to make the business remunerative. And again, all farmers who are a success as general farmers, have not the taste for, and are not adapted to, the dairy business.

As to the sugar beet business, all practical men are aware that it would be extreme folly for all the farmers in the great state of Michigan to try to raise them. Only certain classes of soils are such as can be profitably used on which to raise sugar beets. The business can only be followed with profit in certain locations, and that, too, where the right

kind of help can be available at the proper time. A long haul to the shipping station means an expense that will destroy the profits.

If Secretary Wilson made the statements the papers reported him to have made, it was a bold piece of paternalism which exceeded good judgment. It was "volunteered advice" which was not asked for. The farmers of Michigan understand conditions in the state, and their own business, much better than does Secretary Wilson.

The Wheat Crop a Necessity.

To take the wheat crop out of the series of crops raised on the farms in Michigan would be a calamity such as would be very serious to endure. It is one of the established necessities on a very large percentage of the farms.

In the first place, the wheat crop is one of the several money crops that are raised on the farms. It is a crop that will sell for the market price at any and all times of the year. If it is not convenient or desirable to sell it at one time of the year, it can be safely held until it can be disposed of to an advantage to the raisers.

In the second place, the wheat crop is one of the best, if not the best crop, with which we can seed down the land to the clovers and timothy. The conditions of the ground in the spring of the year are such that it is, in the majority of cases, an easy matter to get a catch of clover. The wheat plant is not so leafy, while it is growing in the spring and early summer, but that the clover can get sufficient sunlight to thrive while young. The wheat plants do not rob the soil of the elemental plant foods that the clovers and timothy require while young, as is the case, to a great extent, with some other crops.

In the third place, the wheat fits in the rotation of crops on the farm better than some other crops. Whether the preceding crop is beans, oats, barley, potatoes, grass or corn, the wheat can be used in the rotation with better success and with better profit, than can any other crop.

In the fourth place, the wheat crop furnishes a large amount of straw which is almost indispensable as bedding for the live stock kept on the farm. The straw when used as bedding is an excellent absorbent of the liquid manure and carries it to the fields where it can be utilized by the crops during the succeeding years. The straw also aids in keeping up the supply of humus in the soil, an important necessity if the productiveness of the soil is to be maintained.

On the whole, it will be a wiser plan to stick to the old standard crop, wheat, which has been a blessing to the farmers of Michigan ever since the time when they began to plant and raise crops for food and for market. The politicians and deluded theorists may frame statements that seem to suit their individual desires, and individual interests, but the farmers should avoid being misled by men, although occupying high positions, who are either lacking good judgment, or have private interests which they wish to advance. It is the privilege, as well as the duty, of the farmers of Michigan, to act according to their own best judgment, and if it seems best to raise wheat in Michigan, do so.

Wayne Co.

N. A. CLAPP.

A BARRY COUNTY FARMER'S EXPERIENCE WITH ALFALFA.

Our experience with alfalfa began in the early 90's. The character of our soil varies a great deal; it runs from a sand loam to a heavy red clay and you will find this mixture of soils in nearly every field. Contrary to most reports that alfalfa does best on sandy or sand loam soils, it seems to find a natural home here on these heavy red clay spots. Our land is also quite rolling.

The first piece we sowed consisted of about 100 square rods of ground that lay on the right side of the barnyard. It was used for a garden for a number of years and had been manured a number of times, so it was very rich. The soil is a good sand loam.

This plot was sown in the spring with oats, then they were cut green and cured for hay. We had a fine catch; it looked quite yellow the first year but after that it grew fine and we cut as high as 58 large bunches of hay at one cutting on this 100 square feet of ground. This piece was left into alfalfa about 10 years, then it was broken up and used as a garden again until two years ago; then it was reseeded and last year we turned 40 hogs

(mostly spring pigs) into this same patch of alfalfa, as soon as it got started in good shape, and it gave them all the pasture they would eat until about the first of August. The next field we tried to seed consisted of 10 acres of land quite rolling and situated at the back end of the farm. This field was plowed early and worked down in good shape and seeded the first part of June. This came up in nice shape but soon after we had a very heavy rain that washed the ground very badly, but it came on fairly well and we mowed it two years and then pastured it until the June grass run it out.

We then tried to seed a field of 20 acres. This field was not quite as rolling as the other one and the soil varied a good deal in character. It was plowed early and worked until June and seeded, a peck to the acre. We had a fine stand here and it looked good when it went into winter, but we had a very hard winter with scarcely any snow and lots of ice, so that we lost all of it except about five acres on the west end of the field that laid nearly level and was protected on the west and north sides by woods. This five acres did fairly well and cut quite a fair amount of hay for about five years, then it was plowed up.

Neither of these two fields were inoculated, nor was there any lime sown, and while we got some hay the results were not satisfactory except on the small plot sown first, which was considerably richer land than the other two.

But two years ago we started out to seed 10 acres, determined to make a success of it if possible, and the results were quite favorable. This last field, the year before it was sown to alfalfa, was a good clover sod. It was heavily manured and planted to corn and well tilled throughout the season, then the next spring was plowed early and worked until June and then we put on 1,000 lbs. of ground burnt lime to the acre and dragged it in, then inoculated the ground with soil from the first plot sown and seeded it at the rate of 15 lbs. to the acre. We would have had a perfect stand had it not been for another heavy rain that washed it quite badly. It went through the winter all right but it did not seem to do very well until about the first of last September, when it began to get black and would have easily cut a ton to the acre in October, but we turned the cattle into it and let them pick the tops off a little and left the rest on the ground to hold the snow. This year it has done fine. We have the first cutting in the barn, it going nearly two tons to the acre.

If we sow any more I think it would be better to sow the lime in the form of ground limestone and sow it the year before the alfalfa is sown. Also, I think on hilly land it would be better to sow it as soon as the danger of frost is over in the spring. Then it would have more of a start before the heavy rains come, and would also have a better root when winter set in. I think that lime is the most important factor towards success, for we left a strip about a rod wide on the west side of the field that was not limed and you can see, to a plant, where the lime came; it was small and yellow and very thin where the lime was not sown. The alfalfa has started up fine since these last rains, and looks like another good cutting in only a few weeks.

Barry Co.

R. H. BURTON.

When men mowed the grass with scythes in 1860, spread and turned it over for drying with pitchforks, when they raked it into windrows with a hand rake, cocked it with a pitchfork, and baled it with a hand press, the labor time required per ton was 35½ hours; but when this method was superseded with a mechanical mower drawn by horses, a hay tedder, and a hayrake and hay gatherer and stacker, all drawn by horses, and a press operated by a horse, the labor time was reduced to eleven hours and thirty-four minutes. Herein lies the strength of the horse as an economic animal.

GREAT LAKES MAP.

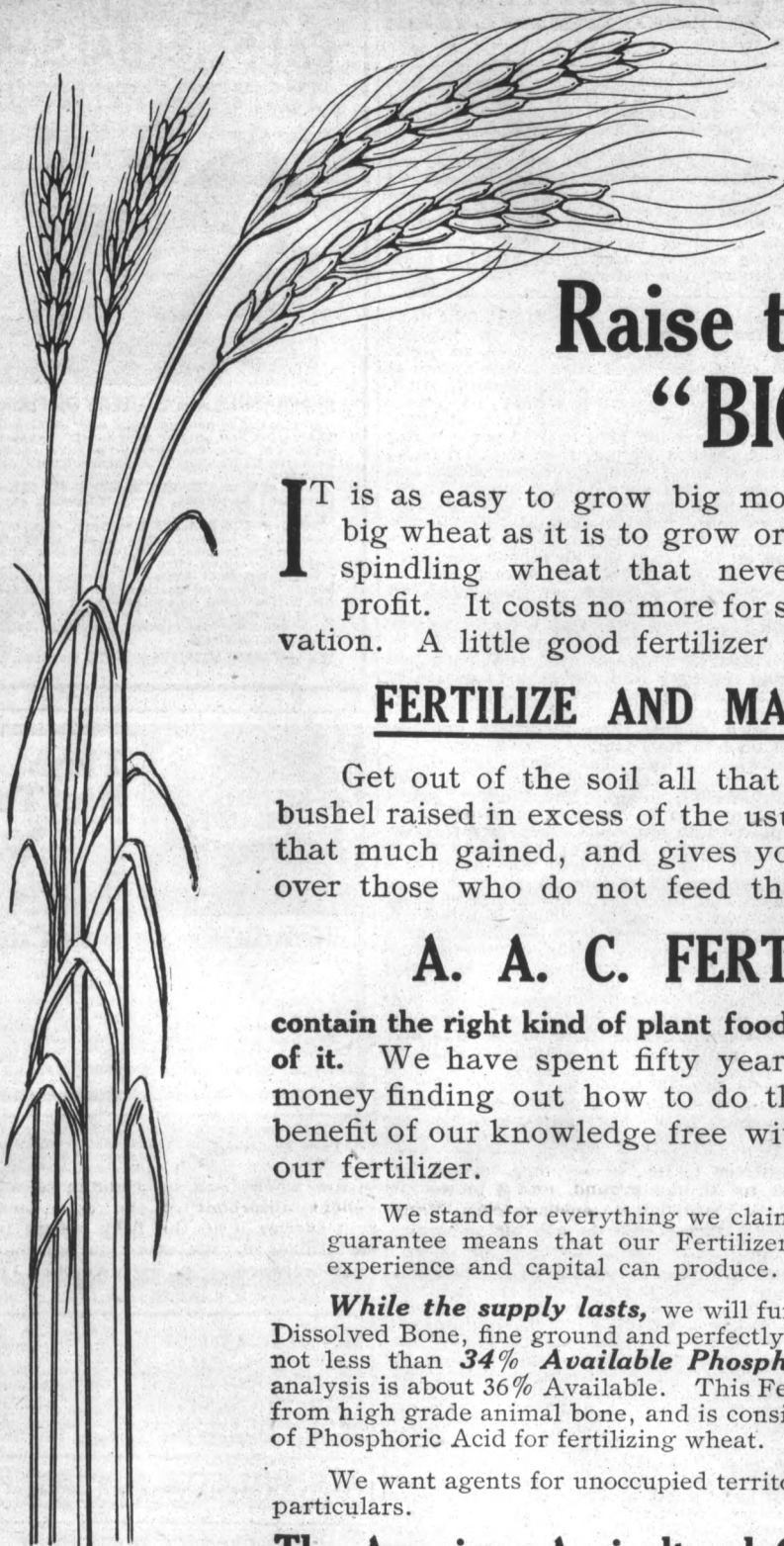
Send for Interesting Vacation Literature. The D. & C. Line, which operates daily steamer service between Detroit and Buffalo, has published a pamphlet containing the largest map of the Great Lakes, the largest map of the Great Lakes, showing routes to all summering places. You should have one to plan your vacation. A request with two cent stamp enclosed will bring it. Write now. DETROIT & CLEVELAND NAVIGATION CO., Detroit, Mich.

LIVE STOCK

A HARNESS SHOULD FIT.

Can you think of anything more cruel and perhaps unprofitable, than working a horse in a bad-fitting harness? Now, let us consider this subject for a moment from the humane side, for no person should be willfully cruel. A bad-fitting harness always produces more or less pain and annoyance to the animal. If the horse suffers pain when working he frets and consequently loses flesh. Another very important thing to consider is the loss of service while sore shoulders, backs and chafes are being healed. In many cases it is impossible to heal collar and saddle galls, without resting the horse. A harness should be neither too small or too large, for if too small it pinches, chokes the circulation of blood to and from the parts which usually results in congestion, followed by more or less inflammation of the bruised part, but if too large the harness shifts from place, causing more or less friction.

Everyone of us wear shoes—none of us have escaped having sore feet, and in nearly all cases it is the result of wearing too small or too large shoes, that were not the shape of our feet. We seldom find two horses that have the same shaped, same size of neck and the same formed shoulders, therefore it is unreasonable to assume that one collar should fit several horses. Now, in selecting a collar for a work horse, what is the common custom? Most people buy a harness and attempt to fit it to their own horses, instead of taking the horse to a collar maker, having him measure the horse's neck and examine his shoulders. Whenever a collar is too wide, the horse doing hard work during hot weather, the shoulder is almost certain to be made sore. The collar should be plenty long and it is important that it fit the whole neck, especially the upper part, or it pinches and makes a sore. The face of a collar should be made so as to have a resting place on the whole shoulder, therefore, if it is too wide, it is sure to hurt the horse. I know of no investment that has brought me as good returns as money which I have paid expert collar makers for their work. Every work horse that is working is earning money and he is entitled to a good fitting collar. The only way to prevent sore shoulders in some horses is to have a collar maker make a collar that fits the horse. The size of horses' necks reduce very much when they are thin, and enlarge considerable when they are fleshy; therefore, the condition of the horse should be considered when having his neck fitted. It is true that by using sweat pads of different thickness a collar can be so adjusted to the neck, so that a horse is made more comfortable, than if wearing too large a collar. The sweat pad is very useful in assisting to make the collar fit, but most farmers and team owners have too few of them. The sweat pad soon becomes filthy and unfit to wear unless it is cleaned and dried daily, especially if the horse that wears it perspires much. I have found it a good plan to dip dirty sweat pads in gasoline or benzine, or wash them with soap and water and hang them out in the sun. Much can be done in the adjustment of a collar to the neck by giving attention to the hames, for if they are too wide apart at top, or I might say, too wide apart at bottom, a horse never works comfortable. See that the hames fit the collar if the collar fits the horse. Bad shaped hames very often spoil the horse's comfort. Now, a word regarding the saddle, which is, of course, of less importance than the collar; however, there are so many different shaped backs, that it is absolutely necessary to have a nice fitting saddle, and I am sorry to say that few teamsters give this matter much thought when selecting a harness. The result is, if the saddle does not fit the back and the harness is heavy, it is almost certain to cause soreness, if not a wound. The center of a saddle should stand away from the center or ridge of back. It is also important to tighten the belly girth fairly snug to hold saddle from moving too much. I find that it is also important to have a nice fitting crupper if one is used on a harness at all. If crupper is too small and not well made, the horse heavy-headed and check fastened to saddle, the tail is usually made sore, but if the crupper be large and smooth the tail seldom gets sore. The parts of a harness that come in contact



Raise the "BIG" Wheat

IT is as easy to grow big money-making crops of big wheat as it is to grow ordinary crops of small spindling wheat that never pay anybody any profit. It costs no more for seed, planting or cultivation. A little good fertilizer makes the difference.

FERTILIZE AND MAKE MONEY

Get out of the soil all that it can bear. Every bushel raised in excess of the usual production means that much gained, and gives you a great advantage over those who do not feed their crops.

A. A. C. FERTILIZERS

contain the right kind of plant food for wheat and plenty of it. We have spent fifty years and a great deal of money finding out how to do this, and you get the benefit of our knowledge free with every purchase of our fertilizer.

We stand for everything we claim for our Fertilizers. Our guarantee means that our Fertilizers are the best that skill, experience and capital can produce.

While the supply lasts, we will furnish this season A Banner Dissolved Bone, fine ground and perfectly dry, guaranteed to analyze not less than 34% Available Phosphoric Acid. The actual analysis is about 36% Available. This Fertilizer is produced entirely from high grade animal bone, and is considered to be the best form of Phosphoric Acid for fertilizing wheat.

We want agents for unoccupied territory. Write us at once for particulars.

The American Agricultural Chemical Company

Largest manufacturers of high grade Fertilizers in the world. Our factories never shut down
Detroit Sales Department, DETROIT, MICH.

CONCRETE IN THE COUNTRY.

A book of 114 pages, fully illustrated, showing how to use cement on the farm, furnished free on application to PENINSULAR PORTLAND CEMENT CO., Jackson, Mich., Manufacturers of High-grade Cement.

SEED WHEAT

GYPSY WHEAT. Splendid standard variety proven by Ohio Experiment Station, test running 20 years, to be the highest yielder of any variety in the state. We can please you if you are looking for good seed. Write today. Our catalog No. 43, "How to Grow Alfalfa," will be mailed free.

WING SEED CO., Box 543, Mechanicsburg, Ohio.

CHOICE SEED WHEAT.

Goen and Mealy varieties. Goen wheat is a wonderfully hardy, productive red wheat; stiff straw, bearded, and one of the best all around wheats I ever grew. Mealy wheat is also a red wheat but it is the bald variety. It is a most excellent wheat for very rich ground. COLON C. LILLIE, Coopersville, Mich.

BINDER

Attachment with Corn Harvester cuts and throws in piles on harvester or winrows. Man and horse cuts and shocks equal with a Corn Binder. Sold in every state. Price \$20 with line, Tex., writes: "The harvester has proven all you claim for it. With the assistance of one man cut and bound over 100 acres of Corn, Kafir Corn and Maize last year." Testimonials and catalog free, showing pictures of harvester. NEW PROCESS MFG. CO., Salina, Kan.

BONDS

Accepted by U. S. Gov't as security for Postal Savings Bank Deposits are the only class we offer. Instead of the 2% the Postal Banks pay these Bonds will yield from 4 1/2% to 4 3/4% Write for FREE Circular. New First Nat'l Bank, Dept. Z-1 Columbus, O.

THE FREEMAN ENSILAGE CUTTER

SAVES TIME, MONEY, LABOR

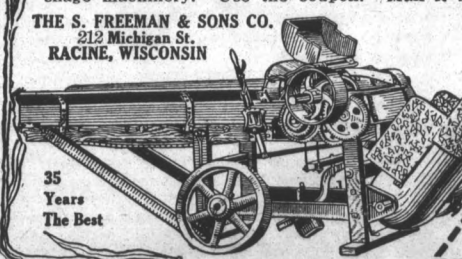
Cuts cleaner and faster—runs easier—saves power. Can't clog or choke up. Force feed type—handles biggest bundle with ease. Strong and durable in every part. Built for years of hardest use without a cent for repairs. Saves you money on first cost and all costs.

Steel enclosed carrier reduces running expense, fills silo quicker, prevents feed blowing away. Has extra strong frame, large feed rolls, safety fly wheel, adjustable knives, can be stopped instantly.

Don't Buy Before You Get Our Book

Showing all sizes of cutters, from a hand power cutter up, and the improved Freeman carriers and blowers which are acknowledged the world's best. Find out all about the Freeman line before you buy. We guarantee to save you money. Write today for our free book on ensilage machinery. Use the coupon. Mail it now.

THE S. FREEMAN & SONS CO.
212 Michigan St.
RACINE, WISCONSIN



FREE BOOK COUPON

THE S. FREEMAN & SONS COMPANY
212 Michigan Street
RACINE, WISCONSIN

Send me at once, postage prepaid, full information about Freeman Ensilage Machinery and name of nearest dealer.

Name _____

Address _____

When Writing to advertisers mention the Michigan Farmer

with the body of horse, such as the crown piece of bridle, traces, back strap and breeching, should be smooth or else they chafe and make the skin sore. Every farmer and team owner should own at least as many horse collars as he does work horses. The collars and saddles should be kept clean and the harness oiled occasionally. Never work a well horse in the harness that came off one which had skin disease, sore back or shoulders. When selecting a harness for your horse, remember a nice fitting one costs exactly the same as one that fits poorly.

In conclusion, let me again urge upon you the importance of giving close attention to the proper fitting of harnesses, for if you do, I am sure it will pay, besides being a great comfort to your horses.

W. C. FAIR, V. S.

FEEDERS' PROBLEMS.

Rye as a Hog Feed.

My neighbor, many years my senior, advises me that rye fed to hogs deranges their digestion and makes them incapable of properly digesting corn when that feed comes on. I am anxious to learn from the experience of others.

R. B. C.

In the writer's opinion, the question of whether it is profitable to feed rye to hogs is a purely economic one, depending upon the relative price of the two grains for its correct solution. In many official tests made to determine the relative feeding value of the two grains it has been clearly demonstrated that rye is nearly equal to corn in feeding value for pigs, being comparable to barley in this respect. The writer has fed large quantities of rye to hogs, and has never noted any of the deleterious effects mentioned in the inquiry. It is true that rye is not a very desirable feed when it is fed alone, on account of the sticky nature of the slop made from the ground grain, but it is not an economical method of feeding either corn or rye to make it the exclusive grain in the ration, unless it is fed in connection with skim-milk to balance up its content of nutrients. When fed as the principal factor in the ration with other feeds to balance it up, it will be found a very satisfactory hog feed. It may also be fed alone with as great safety, but with like poor economy, as corn when the hogs have plenty of succulent pasture, but it is more constipating than corn when fed alone as the exclusive grain ration to pigs confined in a small pen or yard without any green feed. However, since pigs should never be fed in this manner or under these conditions for any considerable period this is not important in the consideration of the adaptability of rye as a hog feed. Whenever rye is cheaper than corn it will pay to utilize it for this purpose in combination with other feeds, making it the basic factor in the ration the same as corn is made when that is the cheaper feed.

EXPERIMENTS WITH HORSES.

During the years 1909-10, experiments were conducted on four Danish farms for the purpose of determining the relative value of oats and Indian corn, of oats and mangels or rutabagas, and of whole and cut straw in feeding work horses of the Jutland breed. The main experiment period lasted, as a rule, from two to three months.

By substituting corn for oats two pounds of corn was found equal to two pounds of oats in the grain ration, and some straw was saved by making this change. When about four pounds of oats was replaced by roots in a ration of from 20 to 24 pounds of oats, two pounds of dry matter in the roots proved equal to two pounds of dry matter in the oats. Such a change in the ration did not apparently produce any injurious effects on the health or working capacity of the horses. Whole straw and cut straw were found to be of equal feeding value, weight for weight, in rations for horses at work.

Investigations conducted at the Minnesota Experiment Station during the past two years indicate that young pigs from immune cows are highly immune to cholera inoculation, but that if they are inoculated the immunity is gradually lost. Inoculation with virulent blood during this immune period has given permanent immunity but pen exposure while nursing has not given satisfactory results. A small amount of work with pigs from susceptible sows indicates that such pigs do not have any important immunity at birth.

VETERINARY

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

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

Leaking Navel.—I have a colt four days old that is unable to get up without help, but when up he is able to walk. The only symptoms that I can notice is a leaking navel. C. L. S., Gaylord, Mich. —The navel opening should be either ligated or stitched to close it, then apply one part carbolic acid and 50 parts water to cleanse the wound, then dust on equal parts of boric acid, powdered alum and iodoform. Be sure that the colt is fed every three hours.

Sprained Tendon—Bursal Swelling.—My horse went lame suddenly while traveling on the road; the horse was examined his foot, found nothing wrong and all that I find is a bunch, or thickening, on back part of fetlock. When standing he rests toe on ground, and I forgot to say he is lame in right fore quarter. C. D. W., Evart, Mich. —Apply one part red iodine mercury and eight parts cerate of cantharides to enlarged tendon or puff once a week. He should have rest until he goes sound, then moderate exercise will do him no harm.

Inflamed Joints—Navel Infection.—Have a colt three weeks old that is troubled with swollen joints. For the first week he seemed to be in good condition, then a puff came on one knee; a few days later one hock joint swelled; I called our Vet. and he treated knee and hock with fair success. The other hock is now inflamed and sore and I would like to know what can be done for a case of this kind. S. L. D., Lawrence, Mich. —This is a genuine case of blood poison, resulting from navel infection and had you tied and treated the navel of colt it could perhaps have been avoided. The navel is perhaps now healed, but if not apply one part carbolic acid and 15 parts water twice daily. Apply camphorated oil to swollen joint twice a day. The colt's mother should have good care; this is done to insure colt a good food supply.

Barren Cow.—My four-year-old cow came fresh March 13; she came in heat soon after calving, but so far as I have been able to tell, never since. I am anxious to breed her now, and come to you for a remedy. G. M. W., Brown City, Mich. —Give 25 grs. extract damiana, 10 grs. powdered cantharides and 30 grs. ground nuxvomica at a dose in feed twice a day. She should be fed plenty of grain and all the better if she ran with a bull. In some cases a forced service proves very effective in bringing on heat.

Wounded Coronet—Lameness.—About three weeks ago one of our heifers got fast in barbed wire fence, wounding pastern. This injury seems to be resulting in enlargement of pastern and causing severe lameness. H. A. W., Vermontville, Mich. —A wound on pastern of cattle or horses seldom heals quickly, during hot weather, unless it has good care and the right kind of dressing. Apply equal parts oxide of zinc and powdered alum to wound twice a day. If the sore seems tardy in healing touch raw surface with Lunar Caustic daily for a few days.

Catarrh.—I have a turkey gobbler that shows symptoms of roup. He discharges from nose and eyes; also has a swelling, or pouch, under throat, but his appetite is good. For some time the eyes were almost closed, now they are better. Our local Vet. gave me a wash for head and medicine to put in drinking water, but I failed to notice any improvement from his treatment. I have greased head with lard and turpentine and thought it helped him. I also lost two hen turkeys last spring, cause of death, diarrhoea. Could they have been saved? F. H. M., St. Louis, Mich. —Dissolve a tablespoonful of salt in one quart of clean water and dip his head in it twice a day. Wet sack with tincture of iodine three times a week. Your other hens had parasitic bowel trouble and should have been treated for worms.

Vertigo.—Last year I had 19 ducklings to begin with and at the end of year all had died but six. A few days before they died they appeared dumpy, stupid, lost control of their head, the head failed to stay where it belonged, flopping to either side or on back. This year I made a pen but kept them in it less, allowing them to have some more out door exercise and so far have only lost one duckling. I removed the sick one from others this year. I forgot to say the sick ones swallowed food with difficulty. R. C., Shaftsbury, Mich. —Your ducklings died of congestion of the brain (vertigo), the result of high feeding and too little exercise. Keep pen clean, keep their bowels open and let them have some exercise every day or two.

From March 1 to latest advices western packers have slaughtered 9,950,000 hogs, an increase of 2,780,000 hogs as compared with the same time a year ago.

Fancy horses are offered sparingly in the Chicago market, and a few prime saddlers have been sold recently at \$800 to \$1,000 per head. Cheap horses are always plentiful, and recent sales have been made of cast-off fire and police department horses at an average price of around \$95 per head. These horses are not sold until they are practically worn out.

Horse Owners Should Use

GOMBAULT'S CAUSTIC BALSAM

The Great French Veterinary Remedy. A SAFE, SPEEDY & POSITIVE CURE.

Prepared exclusively by J. E. Gombault, ex-Veterinary Surgeon to the French Government Stud.



SUPERSEDES ALL CAUTERY OR FIRING.

Impossible to produce any scar or blemish. The safest best Blister ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

WE GUARANTEE that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin cure mixture ever made.

Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.



Time Has Told

You don't need to experiment on a remedy for Spavin, Ringbone, Curb, Splint, Capped Hock, Swollen Joints, or any lameness of horse or man.

Kendall's Spavin Cure

has been the unfailing remedy for 40 years.

Dr. B. J. Kendall Co., Enosburg Falls, N. Y., Apr. 8, 1909.

I have used Kendall's Spavin Cure for the last 15 years, and it never has failed to do all that is claimed for it. Would not be without it. C. A. Dahlman.

\$1 a bottle, 6 for \$5. At all drug stores. Ask for free book, "Treatise on the Horse," or write to

DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.



REG. PERCHERONS for SALE—1 stallion, 1 year old and 1 mare, 2 yrs old, both grays. M. A. BRAY, Okemos, (Ingham Co.), Mich.

Beautiful Collie Puppies now old enough to ship. Intelligent dog, "Dick W." No. 6874. Dam, "Lady of the Lake II," No. 9357, also a beautiful and intelligent Collie. Low prices to quick buyers, and they are warranted to please. Also the handsome 4-year-old SHETLAND STALLION, Corporal W. No. 7933. He is a sorrel and white, and will be a prize to the one who gets him. Edson Woodman, Paw Paw, Mich.

A. S. WILCOX, JEROME, MICH.—Live Stock and Real Estate AUCTIONEER. Write for terms and dates.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS.

Herd, consisting of Trojan, Ericas, Blackbirds and Prides, only, is headed by Egerton W. a Trojan Erica, by Black Woodlawn, sire of the Grand Champion steer and bull at the International in Chicago, Dec., 1910. He is assisted by Gadulata Blackbird, Jr.

WOODCOTE STOCK FARM, Ionia, Mich.

GUERNSEY BULL CALF from A. R. ancestors Dropped December 20, 1910. ALLAN KELSEY, Lakeview, Michigan.

TOP NOTCH HOLSTEINS

Top Notch registered young Holstein Bulls combining in themselves the blood of cows which now hold and have in the past held World's Records for milk and butter fat at fair prices. McPHERSON FARMS CO., Howell, Mich.

Holstein Friesian Cattle—BULL CALVES, Grandsons of Canary Mercedes, W. B. JONES, Oak Grove, Michigan.

HOLSTEIN-FRIESIAN Cattle and Duroc Jersey swine. Bull calves for sale from A. R. O. Cows. E. R. CORNELL, Howell, Michigan.

HOLSTEIN BULLS—1 with a 20 lb. Dam: A grand one at a low figure. Several fine ones at lower cost. LONG BEACH FARM, Augusta, Kalamazoo Co., Mich.

FOR SALE—Holstein Bull 2 years old \$125. Bull Calves 6 months to 1 year \$50 to \$100. Bred heifers \$150 to \$200. Oldest herd in Ind. Send for Photos and Pedigrees, W. C. JACKSON, 735 Rex St. South Bend, Ind.

HEREFORDS—Both sexes and all ages for sale. Also Poland-China hogs. ALLEN BROS, Paw Paw, Mich.

BUTTER BRED JERSEY BULLS FOR SALE CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

Register of Merit Jerseys. Official yearly lot of young bulls from dams with official records of 483 pounds and upwards of butter. T. F. MARSTON, Bay City, Michigan.

JERSEY BULLS—Reg. Ages from six months to maturity. Dams high producers. Prices right. W. E. SHELTON, Litchfield, Mich.

JERSEYS FOR SALE—A few choice heifers and heifer calves richly bred. A. NEWMAN, R. No. 1, Marlette, Michigan

FOR SALE—Reg. St. Lambert Jerseys, producing stock. C. A. BRISTOL, Fenton, Michigan.

LILLIE FARMSTEAD JERSEYS.

HERD BULLS—Vidas Signal St. L. No. 58197. Jubilee's Foxhall, No. 82299. Bull calves sired by these great bulls, and out of splendid dairy cows, many of them in test for register of merit. Also a few heifers and heifer calves for sale. Write for description and prices. Satisfaction guaranteed, or money refunded. COLON C. LILLIE, Coopersville, Michigan.

DAIRY SHORTHORNS

of the Best Milking Families. All milk weighed and records kept. W. W. KNAPP, R. D. 4, Watervliet, Michigan.

REGISTERED JERSEYS For Sale—Some combin. ing the blood of St. Louis and Chicago World's Fair Champions by HERMAN HARMES, Reese, Mich.

SHEEP.

Oxford-Down Sheep and Polled Durham cattle for sale. J. A. DE GARMO, Mair, Mich.

Oxford Down Sheep—Good Yearling Field for sale. I. R. WATERBURY, Highland, Michigan.

Reg. Rambouillets—I have 100 ewes, among them all of my youngest and best, also 85 ewe and ram lambs. Live 2 1/2 miles east of Morrice on G. T. Road. Address J. Q. A. COOK.

HOGS.

Durocs & Victorias—Growthy Spring Boars & Glits of choicest breeding from Prize Winners. M. T. STORY, R. 248, Lowell, Michigan.

BERKSHIRE PIGS combining the blood of the Longfellow families—the world's best breeding Price \$15. C. D. WOODBURY, Lansing, Michigan.

Berkshires—Ten glits bred to the wonderful Duke Pontiac Chief, to farrow in April or May. No better breeding. C. S. Bartlett, Pontiac, Mich.

BERKSHIRES—Registered boar pigs, excellent individuals, breeding unsurpassed. Price \$15. C. C. COKEY, New Haven, Mich.

TWO Berkshire Glits, sired by Handsome Prince 3. Bred for Aug. farrowing, will sell at \$40 & \$45 also a few spring pigs left. A. A. PATILLUO, Deckerville, Mich.

DAMS BROS., Litchfield, Mich., breeders of Imp. Chester White and Tannworth swine, service boars, sows bred or open, of either breed. Shorthorn Cattle, Buff Rock, Buff Wyandotte, W. Orpington, Chks. all breeding stock, leading winners.

O. I. C. Swine—Bred glits, males weighing from 150 to 250 lbs. Price and type right. Geo. P. Andrews, Dansville, Ingham Co., Mich.

O. I. C.—March pigs with quality and best pedigree. Order now and get first choice. C. J. THOMPSON, Rockford, Michigan.

O. I. C's For Sale—Best quality, large growthy type, either sex, pairs not akin, some fine bred glits, choice lot of fall pigs all ages. OTTO B. SCHULZE, Nashville, Michigan.

CHESTER WHITES—Sold out but business of raising Chesters and Holstein cattle. Both Phones. W. O. WILSON, Okemos, Mich.

O. I. C's, Bred sows all sold. 93 choice Mar. & April farrowed pigs either sex, sows bred or open, in buyers name. Fred Nickel, R. No. 3, Monroe, Mich.

O. I. C. March Pigs and Sows—Farrow Aug. & Sept. H. W. CLARK, R. F. D. 4, Brighton, Michigan.

O. I. C's—All ages, 25 young and 2 yearling sows, safe in pig. Price for a short time \$22 to \$30. H. H. JUMP, Munith, Michigan.

O. I. C.—Choice registered pigs 8 to 16 weeks old, from World's Fair Winners. Glenwood Stock Farm, Zeeland, Mich. (Phone 84.)

O. I. C. Choice Spring Pigs, either sex. Pairs not akin. Order now and get first choice. All pigs shipped on approval and Reg. free. HARRY T. CRANDELL, CASS CITY, MICH.

O. I. C. SWINE—My herd is chiefly of the Royal strain both males and females. Get my price before you buy. Will register free of charge in purchaser's name. A. J. GORDEN, R. No. 2, Dorr, Michigan.

DUROC-JERSEYS—Bred Glits and spring pigs for sale. CAREY U. EDMONDS, Hastings, Michigan.

FOR SALE—DUROC-JERSEY bred sows, pigs and Shepherd Pups. Express prepaid. J. H. BANGHART, Lansing, Mich.

WALNUT HILL DUROCS—17 fancy sows bred to Mich. Col. for August and Sept. farrow. 165 spring pigs, both sexes, priced right. Write or come. J. C. BARNEY, COLDWATER, MICHIGAN.

LARGE TYPE P. C. Largest in Mich. Sept. & Oct. L pigs weigh 250 to 300 lbs. Sired by two large boars and from largest sows in State. Come and see and be convinced. W. E. LIVINGSTON, Parma, Mich.

POLAND-CHINAS—Booking orders for spring pigs. WOOD & SONS, Salsine, Michigan.

Spring Pigs either sex. Fall sows, L. W. Barnes & Son, Byron, Shiawassee Co., Mich.

Three Extra Good Fall P. C. Boars

By Next In Line. 32 spring male pigs ready to ship. I ship C. O. D. and furnish pedigree promptly. If you want good as the best, write me for prices.

WM. WAFFLE, Coldwater, Michigan.

Butler's Famous Wonders—The big Poland-China, without a peer, combining size, bone, quality. We're headquarters for everything in Poland-Chinas. Herd boars, brood sows, weanling pigs, always for sale. Registered Jersey Bulls of all ages for sale, our prices are low. J. C. Butler, Portland, Mich. Bell Phone.

BIG TYPE POLAND CHINA BOARS, also fall and early spring pigs. B. F. Rock eggs \$1.00 per 15. ROBERT NEVE, Pierson, Michigan.

FOR SALE PURE BRED YORKSHIRE PIGS. Both sexes. Price reasonable. MURRAY-WATERMAN CO., ANN ARBOR, MICH.

Lillie Farmstead Yorkshires—Holywell Manor and service boars. Large Herd. Three service boars. Pairs and trics, not akin. Boars ready for service. A fine lot of spring pigs. Glits bred for August farrow. The best hog on earth. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

Don't Fail to mention the Michigan Farmer when you are writing to advertisers.

POULTRY AND BEES

GETTING STARTED IN THE POULTRY BUSINESS.

The first consideration in establishing a poultry business is the location. We must select a location that is suitable in every respect. Any kind of soil, just so it is soil, will not bring best results in poultry raising. A high, dry porous soil is to be preferred to others. Such a soil, of a sandy or gravelly nature, is much better than a heavy, clay soil.

In selecting the location the drainage must be considered. If possible, select an elevation with drainage away from the building. Never select a location where the water will stand, as this means dampness in the house and sickness and death among the flock.

The time of year to build should also be taken into consideration. The best time, in my opinion, is to build in the late summer, as the building will then have time to thoroughly dry out before cold weather sets in. This drying out is essential to the health of the fowls, as green lumber is often used in building.

The house should stand upon a good foundation. I consider a foundation of concrete the best for all purposes. It is waterproof and will therefore keep the floor and litter nice and dry. It is also rat and mouse proof. Such a foundation can be cheaply constructed when one has the time to do it himself. If the material for the concrete is not available, or the pocketbook will not permit of such a wall, the building may be erected on posts.

In regard to the floor, I will say that I prefer one of earth. It is easily kept clean and is usually dry. All that is necessary to cleanliness is to remove a little of the surface and replace with fresh dirt. The earth floor should be several inches higher than the ground outside to insure dryness. A board floor usually rots in a short time unless air is allowed to circulate underneath, and this makes it cold, besides furnishing a harbor for rats.

The roof is one of the principal factors. It must consist of such material as is absolutely waterproof. A leaky roof spells ruin. I have asphalt roofing on my poultry house and it has proven very satisfactory. Its cost is very low in comparison with a shingle roof and it is easy to put on. It requires no painting, which is a very good point in its favor.

The interior arrangement of the house may be made to suit the owner. The roosts are preferably placed on a level to prevent crowding, as the fowls will all try to get on the top roosts if they are not of equal height. They should not be over three feet from the floor. Alighting on the hard ground from a high perch causes bumble-foot. Construct a drop-pings platform about eight inches below the roosts. This platform should extend the entire length of the roosts and about a foot beyond them on each side in order to catch all the droppings.

Indiana. O. E. HACHMAN.

TURKEYS AILING.

I am trying to raise a few turkeys this season. One has already died and others are beginning to droop in the same manner. They are about one month old when they begin to droop, lose their appetite and get thin. Their feathers become rough. I have used louse powder freely; feed them curdled milk, corn meal and wheat, and put rusty nails in their drinking water, which is frequently renewed. Kalamazoo Co. SUBSCRIBER.

Drooping, loss of appetite and roughening of the feathers are general symptoms only and give little aid in determining the nature of the trouble. Inquirers should examine sick fowls closely, and, where deaths have occurred, a post-mortem will generally reveal conditions which assist greatly in making a correct diagnosis. It would seem that the iron in the drinking water should have been sufficient to prevent the ordinary bowel disorders that are rather common in hot weather and it therefore seems likely that the trouble may be blackhead. Diarrhoea is generally a conspicuous symptom of this disease; the head and comb usually take on a dark color and the liver becomes enlarged and disfigured with whitish or yellowish spots. Eastern turkey growers have been forced to give this disease considerable attention and the Rhode Island station recommends isolating the sick fowls, placing them in a dry, well lighted location and feeding sparingly on soft, light, easily assimilable food, with little

grain, especially corn. Place the unaffected ones on fresh ground, and endeavor to prevent their coming in contact with germs from sick or dead fowls. As treatment, another authority recommends, for turkeys under three months old, ½ gr. copperas in the morning and a 2½ gr. pill of salicylate of soda in the evening. Also give epsom salts every three or four days and keep the grounds and floors well sprinkled with lime.

KEEPING QUALITY OF DRAWN VS. UNDRAWN POULTRY.

The results of investigations into the comparative rate of decomposition of drawn and undrawn poultry, made by the United States Department of Agriculture during the season 1909-1910, have recently been made public. The conditions of the experiment were strictly commercial, as the fowls were killed and dressed by the regular employees of a poultry packing house, were shipped in the usual one-dozen-to-the-box package in a car lot of dressed poultry, were received by a wholesaler and handled with his stock, and went to the retailer when he purchased fowls from the same car-lot, remaining in his shop for the period which the market happened to require for their sale.

The shipments extended over a period of six months, from January to June, inclusive, and the haul was about 1,700 miles requiring on the average of 76 days. The fowls were mature hens, large and fairly fat, and the method of killing was by bleeding through the mouth and puncturing the brain through the skull just below the eye. The carcasses were dressed according to methods known respectively as "full drawn," "wire drawn," "Boston drawn," and some were undrawn, all being dry picked, and the evisceration was conducted with sufficient care to render washing unnecessary.

The routine of dressing, packing and shipping, and general handling in these experiments is far above the average. In fact, if all market poultry should be handled so well, the problem of decay would become insignificant.

The investigations demonstrate (1) that undrawn poultry decomposes more slowly than does poultry which has been either wholly or partly eviscerated; (2) that "full drawn" poultry, completely eviscerated, with head and feet removed, decomposes the most rapidly; (3) that "Boston drawn" and "wire-drawn" stand midway between the undrawn and "full-drawn" in speed of decomposition—the "wire-drawn," which is most like the undrawn, being usually the better; and (4) that these deductions apply to dry picked, dry chilled, dry packed, unwashed fowls, which have been marketed with what would be called promptness.

THE HONEY OUTLOOK.

Several reports, already published in this department, from leading honey-producing counties of this state have shown that the outlook favors reasonably good yields of honey. However, it is known that in some sections—notably the southeastern portion of the state—nectar-producing crops have suffered very severely from drouth. As Michigan bee-keepers are interested in conditions, not only in this state but throughout the country, we present the following summary of advices received by Gleanings in Bee Culture and appearing in that journal of date of July 1: Reports show that Texas will not have as large a crop as was first predicted. California, taking in the whole state, will do considerably better than first advices seemed to indicate. Iowa, Missouri, Nebraska, and all that section of the clover belt, have been hit hard by the drouth and there will not be much clover honey from those states. Recent rains through the central states have improved conditions in Michigan, Ohio, Western Pennsylvania, and New York; and it begins to look now as if Michigan and New York might have some white-clover honey as well as basswood. Wisconsin will not have much clover, but probably some basswood. Illinois and Indiana seem to have been struck by the same drouth that blighted the clover in Missouri and Iowa, and reports do not look good from these states. There will be a fair to light clover-flow in northern Ohio, in central New York, and central and western Pennsylvania. Eastern New York, eastern Pennsylvania, New Jersey, Delaware, and Virginia, have also been hit by a drouth, and the crop will be light if not a failure. Vermont and Maine, as well as Canada, at the present writing, give promise of a flow of clover honey.



The Good Road For Universal Service!

Every man's home faces on a road which connects with every other road and leads to every other home throughout the whole land.

Main highways connect with crossroads so that a man can go where he chooses easily and comfortably if conditions are favorable. But the going is not always the same; some roads are good—some are bad.

The experts in the South illustrate the difference by showing four mules drawing two bales of cotton slowly over a poor, muddy crossroad, and two mules drawing eight bales of cotton rapidly over a first class macadam highway.

The Bell Telephone lines are the roads over which the speech of the nation passes.

The highways and by-ways of personal communication are the 12,000,000 miles of wire connecting 6,000,000 telephones in homes on these highways. Steadily the lines are being extended to every man's home.

The public demands that all the roads of talk shall be good roads. It is not enough to have a system that is universal; there must be macadamized highways for talk all the way to every man's home. A single section of bad telephone line is enough to block communication or confine it to the immediate locality.

Good going on the telephone lines is only possible with one policy and one system. Good going everywhere, at all times, is the aim of the Bell System.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service

Do You Want Work?

We have absolutely the best proposition to offer those who can give all or part of their time we pay a liberal salary and expenses. For those who can give only part of their time to us. We have the most attractive commission and rebate proposition ever offered. Teachers and students can earn a large salary during vacations. The work is pleasant and instructive. Write at once for full particulars, addressing BOX F, care MICHIGAN FARMER, Detroit, Mich.



BUFFALO BICYCLES
\$24.45

"Built for Business." Equipped with Coaster Brake \$27.55. (\$3.10 extra.)

Bicycle complete with tool kit and bell; frame of reinforced seamless steel tubing; has extra long steel mud guards and all such standard equipment as 45-position handle bars, rubber grips, 3-spring seat, "Beats All Puncture Proof" tires, "Lefevre" or Imported Twin Roller chain; finest nickel and enamel finish. It's the easiest running, most durable bicycle made; built to give reliable service. Guaranteed for L-I-F-E.

30 DAYS FREE TRIAL

We will EXPRESS this Bicycle PREPAID, subject to your examination and approval at your express co's office—ride it 30 days, and if then you are not satisfied with it or certain it is the equal or superior of any sold for \$50 we will give you back every cent of your money. Send for "Money-Saving" Catalog, (illus.)—Do it NOW.

F. F. RICK & CO., Manufacturers, Dept. M 1, Buffalo, N. Y.

"EGGMAKERS"—S. C. Brown Leghorns. Get first choice of male birds now. \$1 up. Write me. W. S. Cooper, Mt. Pleasant, Mich.

White Leghorns—Rose or single comb cock-erels. Rose Comb eggs \$1 to \$2 per 15. Ray J. Graham, R. F. D. No. 1, Flint, Mich.

LILLIE FARMSTEAD POULTRY B. P. Rocks, R. I. Reds, W. Wyandottes and S. C. W. Leghorn eggs for sale, 15 for \$1.25 for \$1.50; 50 for \$2.50. COLON C. LILLIE, Coopersville, Mich.

EGGS: EGGS: EGGS—White & Buff Orpington, White & Barred Rocks, Black & White Minorcas, White & Buff Leghorns, Rose & Single Comb Reds, Houdans & White Crested Blk Polish. H. H. King, Willis, Mich.

THOROUGHbred S. C. BROWN LEGHORN Eggs at \$1.00 per 15 or \$5.00 per 100. Stock all sold. LEWIS T. OPPENLANDER, R. No. 4, Lansing, Mich.

Eggs—Light Brahma, White Wyandotte and Barred Rocks. \$1 a setting, \$1.50 for two settings. E. D. BISHOP, Route 38, Lake Odessa, Michigan.

R. C. B. Leghorn Cockerels—Kulp strain, the best in season. C. W. WAITE, Gobleville, Michigan.

SINGLE COMB BLACK MINORCAS—A few more pull-ers. \$1.50 per setting. R. W. MILLS, Saline, Michigan.

SILVER, GOLDEN and WHITE WYANDOTTES. Eggs \$1.50 per 15; \$2.50 per 30. A few White Roosters left, circular free. C. W. Browning, Portland, Mich.

FOR SALE—S. C. and R. C. Rhode Island Red Eggs. 15 for \$1.00; 50 for \$2.75; 100 for \$5. BUELL BROS., Ann Arbor, Mich.

WHITE WYANDOTTES—Useful and beautiful. The pays. A. FRANKLIN SMITH, Ann Arbor, Mich.

DOGS.

NOW WRITE W. J. ROSS, Rochester, Mich., for those beautiful sable and white and tricolor Collie Puppies. Finest breeding, natural workers.

Twenty-five Hound Pups. All bred from the best of trained Ocon hunting par-ents, send stamp. W. E. LECKY, Holmesville, Ohio

ALWAYS mention the MICHIGAN FARMER when you are writing to advertisers.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

AN EIGHTY-ACRE DAIRY FARM.

I desire to call your attention to an article in the Saturday Evening Post, of May 13, and enclose herewith a copy for your careful inspection. The article is the most comprehensive report of dairying I have ever seen, and is put up in such a concise form, that for a city man it makes interesting reading matter, and as I am a city man contemplating a change to the farm, without any knowledge of farming whatever, I am compelled to get information and gain knowledge from such sources as I can. While the article referred to is very interesting, I am somewhat in doubt if it could be worked out in Michigan, and I wish, therefore, you would give me your opinion, either by letter or through the Michigan Farmer. The points I am mostly interested in, is the question of feed and the relative cost as compared with prices quoted in the Saturday Evening Post. Also, the purchase price of Jersey cattle of a good grade, and their production in Michigan. Are any other grade of cattle better adapted for this climate? Approximate selling price to creameries of milk and cream in this section? And will good soil produce the crops, per acre, as quoted? If you can see your way clear to furnish me with this information, same will be very much appreciated.

Kalamazoo Co. M. H. De L.

I have read with a great deal of interest the article referred to in the Saturday Evening Post. It is a splendid article on dairying and very comprehensive, as M. H. D. states. The writer has an understanding of the dairy question and I haven't any doubt but what he could accomplish the results which he claims in the article, but the question is, would he? In other words, he has figured the labor problem altogether too low. The proprietor and one man possibly could take care of 30 cows and do the work necessary, with the exception of four months of the year when they have one extra man. But the proprietor and one other man wouldn't do it, there is no doubt in my mind about that, and it would be well nigh impossible for them to do it. The writer of this article, or a city man going out onto a farm never could accomplish this physical labor necessary to bring about the ideal result. Thirty cows is a good-sized dairy. Night and morning, 365 days in the year, to properly care for the cows and do the other chores on the farm will take up so much of your time and so much of your energy that you can't grow the necessary crops to feed these 30 cows on 80 acres of land. That's the point I am getting at. The plan of farming pictured in the article requires a nice little amount of figuring and management. One must use considerable energy in planning the work. Then if he sells the surplus live stock for breeding purposes he must do considerable corresponding, and this takes time. Records must be kept of the cows so that he knows exactly what each one is doing, and this takes time, and I would say that it would be absolutely impossible for two men to do all the work. Possibly, if a man is very strong physically, and active, if he was willing to forego all recreation, and confine himself 365 days in the year, and about 16 hours a day at that, just hustling from morning till night, this work could be done, but no ordinary man nor no two ordinary men could do it. It will take one man the biggest share of the time with the cows alone, to say nothing about working in the field, and so you had better figure on just about twice the amount of labor to do the farming as the article intends you will do it, that is figured in the article. I am positive that it will cost twice as much to do this labor.

Then again, as to prices. One dollar per gallon for 30 per cent cream is an extremely attractive price. I don't know where you could get it, unless you got hold of some private concern that was willing to pay an extra price for an exceptional quality of cream. The ordinary price at creameries for butter-fat will run around 25c a pound the year around; that is, late years it will average that, last year I think it averaged about 28c per pound. A gallon of 30 per cent cream will weigh about 7½ to 8 pounds, so you would have about 2½ pounds of butter-fat in a gallon of cream and at 25c a pound it would bring you about 65c to 75c a gallon for your cream instead of \$1.00, and this would make quite a difference in the income.

Then again, if you have 30 cows that will average 6,000 pounds of milk in a year. You could develop a herd and fin-

ally get your dairy of 30 cows to make this average.

As to prices, you can go out in the state and buy registered Jersey cows for \$125 apiece but they will be only ordinary Jersey cows. You can't buy the best registered Jersey cows for \$125 each. To start with I should say it would be more profitable to buy grades. You can get many grades that are just as good from a practical standpoint; that is, they will probably earn you just as much in producing butter-fat as the registered one. All there will be about it you cannot sell the bull calves for \$50 each, but I am confident if you undertook to get a herd of cows that would produce you 300 pounds of butter-fat on an average each year, that you would have to pay more than \$125 for them. While grades that would perhaps yield as much butter-fat in a year could be bought for one-half to two-thirds that amount. It would take a little time to hunt them up, but they could be found.

I should say that you could not find any other breed of cattle that would be any better adapted to the kind of dairying described in this article than the Jersey. Where the object sought is butter-fat I don't believe you will get a breed of cattle that will produce butter-fat more economically than the Jersey.

As to the feed problem, the price of bran is figured at \$20. We haven't been able to buy bran for \$20 for the last several years. I do not know within the last two or three years of bran going down below \$25 per ton. The price of oil meal is figured at \$30. You can't buy that in Michigan today nor for the past several years at \$30 per ton. You will have to pay in the neighborhood of \$35 to \$38 per ton for old process oil meal.

The yield of crops in the rotation is all right. The rotation and the arrangement of the farm I would consider well nigh ideal. I do not see how it could be better for the purpose. The yield of crop is put down at a reasonable amount, with perhaps the exception of corn for the first year or two. Seventy bushels of shelled corn per acre is pretty good for a Michigan yield, and yet if you had your 80 acres well in hand; that is, had it under a fine state of cultivation, if you made it rich by manuring, you could do better than this.

Now, where the average city man would be disappointed and fall down is that he would not be able to select 80 acres of land in such condition at the present time that he could go on and adapt this system and make anywhere near the amount mentioned in this article. When you sell \$4,847 worth of stuff from an 80-acre farm you are "going some," and when your net income from 80 acres is \$2,418.50 you certainly have been doing well.

Figure the minimum income which he figures as \$1,918.50 and there is not one 80-acre farmer in one hundred in the state of Michigan that is doing anything near it. Now, I do not think it is reasonable to suppose that a city man with no experience in farming could go out onto the farm and do better than the average farmer is doing. There might be business men, men who had business training in the city that would do things better on a farm in some ways than the average farmer, but he has so much to learn that, for the first few years, I doubt if he would make any larger income than the average farmer, and the average farmer does not make one-quarter of the amount stated in the article referred to, from his 80 acres. If a city man with good business training and plenty of energy would go out onto an 80-acre farm he might hope, at the end of 10 years, to be able to get something like what is pictured in the article.

DAIRYING AND HIRED HELP.

A few years ago the strongest criticism raised to dairy farming was that it was difficult to get competent help and to keep it. Now, conditions on the dairy farm are very much different regarding the help question. There is very little complaint now among the better class of dairymen in that respect. They can get competent help and they can keep it if they do the right thing by the men.

The dairymen are really leaders in solving the hired help problem. In the first place, they employ men all the year round. This is a strong, direct inducement to the men to stay on the farm. The ordinary system that releases men when winter comes and sends them to town has sent many a good hired man away never again to do farm work. It is only through furnishing work for twelve

months of the year that competent men can be kept on the farm.

There is more system and order in an up-to-date dairy farm than in any other branch of farm work. There is a definite amount of work to be done every day and there are definite times for doing it. The very nature of the business calls for system and order. The dairyman must be a business man. He treats his help in a business-like manner. He believes that kind treatment, good food, clean quarters, and pleasant surroundings are just as essential for his men as they are for his cows.

Dairying calls for the very best class of laborers. Every job on the place is a position of responsibility. It takes a man who is just a little better than the average to attend to the small details of dairying. Dairymen recognize that fact and many of them are paying wages above the average on that account.

The keeping of records of individual cows, especially those cows which are being tested for advanced registry or for some prize competition, arouse the interest of the hired men and stimulate them to their very best efforts in caring for the cows. A short time ago on a general farm that is being changed to dairy, the father, the son, and the hired man were discussing the prospective record of their favorite two-year-old heifer and comparing her daily and weekly record with one that was making a world record at the state college. The hired man arose and left. Later, when the son went out to begin the afternoon's work he found the hired man currying that two-year-old heifer. Hired men really like to take an interest in the work and there is nothing that affords them opportunity to do as dairying does.

Iowa. H. E. MCCARTNEY.

VARIOUS USES OF MILK BY-PRODUCTS.

Cheese may be made from skim-milk, and should be a very good way to dispose of large quantities of this by-product. A product called "Dutch Cheese" or "pot" cheese is also made from skim-milk, and it finds a ready sale in many cities and towns. While there seems to be no established price, many claim to be able to secure nearly a dollar a hundred pounds for their skim-milk made up into this kind of cheese.

Buttermilk ranks next to skim-milk in feeding value, and is also used largely in cooking and baking. Good buttermilk fresh from the churn is more valuable than whole milk, but the danger of its not being well cared for while being shipped causes the demand to be very small in most cities and villages.

For feeding stock, buttermilk is better adapted to pigs than to other animals. I believe that for feeding pigs it is about as good as skim-milk. I would prefer the skim-milk because there is less danger of the animal's digestive system becoming deranged while it is being fed.

Whey is a by-product from the manufacture of cheese and possesses more or less feeding value when fed to pigs. Some experiments go to show that it is about one-half as valuable as skim-milk, but I have never been able to realize that much from it while feeding swine or calves.

New York W. MILTON KELLY.

AFTER THE BUTTER IS MADE.

Many buttermakers seem to think that after the butter is made their whole duty is done, but this is not so, unless the cold storage and marketing are taken out of their hands. Better cold storages are needed at the creameries, but it is more important that butter be sent once a week to a co-operative or private cold storage where the temperature is maintained under 32 degrees F. until the butter is ready to go into consumption. Under marketing I would lay down this general principle to be observed: Deal as directly as possible with the consumer. When the history of selling farm and dairy products is written next century, historians and political economists will stand in amazement at the wasteful methods of marketing which were so common in the nineteenth and the beginning of the twentieth centuries. They will ask themselves how it was possible for a well-informed race of people to be so stupid as to allow a class of men (middlemen) to absorb a greater share of the profits on goods manufactured with so much skill upon the farms and in the farm factories.

Canada. PROF. H. H. DEAN.

THESE FARMERS Say SHARPLES Tubular Cream Separators Cost Least To Use

"Have used Tubular over nine years. Only 5c for repairs."—Perry Faringer, Mill Hall, Pa.

"Have used Tubular nine years. No cost for repairs."—A. C. Porter, Loogootee, Ind.

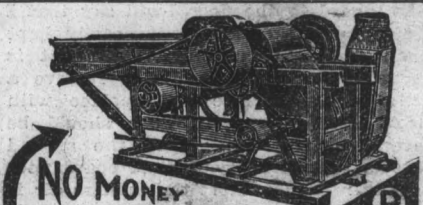
"Tubular has cost fifty cents for repairs in nine years."—John E. Taylor, Orion, Mich.

"Have used Tubular six years. Repairs only ten cents. Still using original quart of oil."—A. K. Weimer, Smithville, O.

A regular hand-driven Dairy Tubular has done work equal to 100 years' service in a five to eight cow dairy on only one dollar and fifteen cents for oil and repairs. We will mail you, free, the illustrated account of this remarkable record, giving all details and containing pictures showing how the parts of the Tubular resisted wear.

Dairy Tubulars have no disks. Twice the skimming force of others. Skim faster and twice as clean. You will finally have a Tubular—so try The World's Best now, without expense to yourself. Other separators taken in exchange for Tubulars. Write for catalog No. 152.

30 Yrs
THE SHARPLES SEPARATOR CO.,
WEST CHESTER, PA.
Chicago, Ill., San Francisco, Cal., Portland, Ore.
Toronto, Can. Winnipeg, Can.



NO MONEY REQUIRED WITH ORDER

We would sooner convince the buyer that his money was well invested before asking him to give it up. We only ask you to give our goods a chance to sell themselves. They are made so good they prove themselves a good investment without the aid of salesmen.

ROSS SILO FILLING MACHINERY
is not an experiment. It is backed by 31 years' experience—more experience than any other machinery of its kind that is made. It is known in almost every dairy and intensive farming district in the U. S., and outside of machines themselves, their owners are their best advertisement—our best salesmen. Our large catalog tells a most interesting story about Ensilage Cutting and Silo Filling machinery. It is free. Write for it. We also manufacture the Ross Silo. E. W. ROSS CO. Box 14 Springfield, Ohio

Shoo-Fly THE ANIMALS' FRIEND

Keeps flies and all insects and pests off animals—in barn or pasture—longer than any imitation. Used and endorsed since 1885 by leading dairymen and farmers.

\$1 worth saves \$20.00 in milk and flesh on each cow in a single season. Cures sores, stops itching and prevents infection. Nothing better for galls, kills lice and mites in poultry houses.

SEND \$1, if your dealer can't supply you, for enough Shoo-Fly to protect 200 cows, and our 8-tube gravity sprayer without extra charge. Money back if not satisfactory. Write for Booklet, free. Special terms to agents. Shoo-Fly Mfg. Co., Dept. H 1310 N. 10th St., Philada.

Editor knows from experience that Shoo-Fly is O. K.

"SAVE THE HORSE" SPAVIN CURE.



Manito, Ill., Feb. 21, '11. Troy Chemical Co., Binghamton, N.Y. You have a good remedy; used it on a horse that slipped and caused a big spavin, as bad a case as I ever saw; was three years ago, and it took less than one bottle.

Respectfully, HUGH WOODROW.
Expert Veterinary Advice Always Free. Write for a copy of OUR SIGNED LEGALLY BINDING CONTRACT; also Booklet and Letters from Bankers, Business Men & Farmers the world over on every kind of case. 15 Years' Success. A bottle, with legal signed contract. Absolutely protects purchasers. Permanently cures Spavin, Thoroughpin, Ringbone (except low), Curb, Splint, Capped Hock, Windpuff, Shoe Boil, Injured Tendons and all Lameness. No scar or loss of hair. Horse works as usual. Dealers or Express Paid. Troy Chemical Co., 20 Commercial Ave., Binghamton, N.Y.

Hard Rubber Teat Plugs

For hard-milking cows or leaky teats. Prevents leakage where teat opening is relaxed and cures hard milking where due to an obstruction in the canal. Our price 35c each, or \$1.00 for a set of four. Send orders to

THE MICHIGAN FARMER, Detroit, Mich.

INFLUENCE OF GREEN FORAGE ON QUANTITY AND QUALITY OF MILK.

For a number of years the Pennsylvania State Experiment Station has made a comparative study of some of the soiling crops for dairy cows. It was found that the chief influence upon quantity of milk produced during the experiments seemed to be closely related to the palatability of feeds. That is to say, those feeds eaten by the cows with the greatest relish and consequently of which the largest quantities of green forage were consumed generally gave the largest yields of milk. This seemed to be true regardless of the amount of dry matter or percentage of protein contained in the feed. Briefly, the milk produced bore a much closer relationship to total green forage than to dry matter or protein consumed.

The effect upon quality of milk was shown only in an indirect manner. In no case was a flavor imparted sufficiently marked to be detected after the milk was aerated and cooled. The percentage of butter fat seemed to vary inversely as the live weight of the cows. In other words, those feeds which produced a gain in live-weight seemed to produce a milk containing a lower per cent of butter-fat than was secreted when the cows were losing weight. This

this kind? And can we secure that discrimination without a campaign that reaches the ear and eye of the public? The State College of Iowa has instituted a course giving instruction in the method of making and judging ice cream. That such a work is certain to get at the heart of the situation is certain, for this instruction will become a part of the education of the men who go out from the school as buttermakers and cheesemakers. Having this knowledge these men will in many instances, begin the manufacture of ice cream in the butter and cheese factories during the season when ice cream has so large a demand. The factory located near the cows is the only one that can get the cream in the best of condition for the manufacture of this product. When cream is shipped over long distances it necessarily deteriorates and the ice cream made from it cannot be of the highest quality, while, on the other hand, where the ice cream itself is frozen and properly put up shipment can be made from the primary plant to the centers of population without damage; thus resulting in a better product, saving more money to the local community and benefiting the ice cream trade generally. We, therefore, are of the opinion that the school above mentioned has started right, and when such institutions together with the agencies employed for



A Good Business Herd—The Property of W. J. Browne, of Eaton County.

was true regardless of the amount of forage eaten or the quantity of milk produced. The indications are that some feeds tend to fatten the animals themselves, while others tend to produce fat in the milk.

IMPROVING OUR ICE CREAM.

Two decades ago ice cream was little known to the average person. It has grown to be an important part of the dairy industry. Every hamlet has its ice cream parlors where patrons come for a social chat while they refresh themselves during depressing days of summertime; and in our large cities thousands upon thousands of gallons of this product are consumed in the warmer months of the year and not a small quantity finds its way through the elaborately equipped emporiums to the consumer when snow is upon the ground. This has all happened within a few short years.

While ice cream was thus becoming popular, a number of agencies were working to improve our butter. Our agricultural colleges and experiment stations were giving the time of scientific men to the study of problems relating to the composition, manufacture, and care of butter, our institute teachers were agitating better methods among the farmers and creamery men, our dairy associations impressed the necessity of raising the standard of quality that better markets might be obtained, consumers with increased discrimination were asking for the best butter, thus making a wider margin between the price of good and poor butter, our inventors were working painstakingly to produce the best machinery for handling the milk and converting it into first-class butter—all these and other agencies served to bring our butter to a higher standard. As a result we are putting upon the market today a far superior butter than we would be had we not had this instruction. Now the question arises, can we not bring the same agencies to work to improve the ice cream product? We recognize the action taken by the federal government and the legislatures of many states along this line and we are certain that great and lasting benefit has come to the business because of the influence of the laws passed and the decisions rendered in the courts; but after all, does it not require discrimination on the part of the public to attain to the highest standards in matters of

the campaign looking to the development of a higher standard of American butter are put to the task, it is certain that the public will enjoy a better grade of this refreshing dish, ice cream, and that dairymen will be benefited through the additional demand for cream to manufacture it.

PASTURING.

As there is no rough or waste land on my farm, I do not have any permanent pastures, but have my farm fenced off into fields of uniform size, so I can change my stock from one field to another at will. While this is a labor saving proposition it is not always the best thing for the farm, because by having all the farm fenced off into fields it is a great temptation to sometimes turn into a meadow and pasture it so long that the crop for the next year is greatly shortened, if not nearly ruined. For a number of years I have kept a medium-sized flock of sheep in connection with a small herd of cows. In the spring of the year these sheep were turned into the field to be plowed for corn, and kept there until the field was plowed. The sheep would eat the grass off so close, that I became convinced they were destroying more of the humus content of the soil especially, than their droppings amounted to in some other fertilizing material. So I have disposed of my flock of sheep, and will do without them for a few years at least, and see whether it will be as profitable to run my farm without them or not.

Ottawa Co.

JOHN JACKSON.

BOOK NOTICES.

Farm Friends and Farm Foes, by Clarence M. Weed, gives in a single volume more definite information regarding insect pests than can be found elsewhere. The book is based upon the latest data available, and embodies the recommendations of the United States Department of Agriculture, of the special experiment stations, and of hundreds of original investigators. Illustrated. Cloth. Price, 90c. D. C. Heath & Co., Boston.

Fundamentals of Agriculture, by 31 specialists, under the general editorship of James Edward Halligan, chemist in charge, Louisiana State Experiment Station. This book is of more than ordinary interest and value. It treats of the soil, plant life, fertilizing materials, farm crops, trees, the garden, plant diseases, insects and birds, live stock and dairying feeds and feeding, and farm management. Cloth. Fully illustrated, 492 pages. Price, \$1.20. D. C. Heath & Co.

HOT WEATHER the ideal Time to Use a DE LAVAL CREAM SEPARATOR

If there is a time when the use of the DE LAVAL Centrifugal Cream Separator is more indispensable to successful dairying than another that time is during the hot weather of midsummer.

The use of the separator at this season usually means the difference between a profit and a loss in dairying, by accomplishing a great saving of butter-fat that goes to waste with any other method of separation and enabling the production of a higher quality of cream and butter-fat than is otherwise possible.

Moreover the advantages of the DE LAVAL over other cream separators are greatest at this season. The separation is more complete and the cream heavier and more even in texture. The machines turn more easily and the capacity is greater, getting the work through more quickly, while the modern DE LAVAL machines are easily cleaned and absolutely sanitary, which is true of no other cream separator.

If you haven't a separator you can scarcely afford to defer the purchase of a DE LAVAL, and if you have any other make of separator there is no better time to discard it in favor of a DE LAVAL, first trying the machines side by side for your own satisfaction, which every DE LAVAL agent will be glad to give you the opportunity to do.

Let us send you a catalog and any desired particulars, including the exchange allowance for your old machine if you have one, and remember that a DE LAVAL can be bought either for cash or on such liberal terms that it will actually pay for itself.

THE DE LAVAL SEPARATOR CO.

165-167 BROADWAY
NEW YORK

29 E. MADISON STREET
CHICAGO

DEUM & SACRAMENTO ST.
SAN FRANCISCO

173-177 WILLIAM STREET
MONTREAL

14 & 16 PRINCESS STREET
WINNIPEG

1016 WESTERN AVENUE
SEATTLE

OUR FLAG **COLEBROS FRANKLIN LIGHTNING ROD.** CBFR

OLDEST LARGEST BEST
1849 SIXTY-TWO YEARS 1911.

OLDEST LIGHTNING ROD HOUSE IN THE WORLD.

Makers of THE WORLD'S BEST LIGHTNING ROD

This Rod has been longer in use, and has had a larger sale, than any other Rod that was ever made.

It is made of the Choicest Materials only, which are carefully selected and scientifically handled from the Ore to the finished Product.

It is the most Costly Rod made and commands the Highest Price.

It has been the Standard for more than half a Century. Hundreds of thousands in use Sixty-two years and Never Failed.

Like other superior articles it is imitated and counterfeited. There are numerous cheap imitations on the market, but the GENUINE is fully protected by our TRADE MARK.

Look for this  on all packages, and for C B F R on the Coupling of every Rod Section.

RELIABLE AGENTS EVERYWHERE, FOR NAME AND ADDRESS LOOK FOR "OUR FLAG" IN LOCAL PAPERS.



To every good builder, well informed feeder, Dairyman or experienced owner of silos, our

IMPERISHABLE SILO

appeals strongly. Made from Patented Interlocking Vitrified Clay Blocks or fire clay, it cannot swell, shrink, crumble or decay. Will not blow over, crack or absorb moisture. Hundreds in use and not one has failed. Concrete is liable to crack unless heavily re-inforced with steel, which makes it cost more than the Imperishable. Concrete absorbs moisture and causes ensilage to spoil next to the walls. In the "Imperishable," silage keeps perfectly clear up to the walls.

Ask us for free Booklet.

IMPERISHABLE SILO CO.
HUNTINGTON, INDIANA.

When Writing to Advertisers please
Mention the Michigan Farmer.

The Michigan Farmer

ESTABLISHED 1843.

THE LAWRENCE PUBLISHING CO.,

EDITORS AND PROPRIETORS.

39 to 45 Congress Street West, Detroit, Michigan.

TELEPHONE MAIN 4525.

NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—600 First Nat'l Bank Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.
GRAND RAPIDS OFFICE—5 & 6 New Hawkins Building.

M. J. LAWRENCE.....President.
M. L. LAWRENCE.....Vice-President.
E. H. HOUGHTON.....Sec.-Treas.

I. R. WATERBURY.....Associate Editors.
O. E. YOUNG.....
BURT WERMUTH.....
ALTA LAWSOHN LITTELL.....

E. H. HOUGHTON.....Business Manager

TERMS OF SUBSCRIPTION:

Five Years 260 Copies \$2.75
Three Years, 156 Copies, Postpaid.....\$2.00
One Year, 52 copies, postpaid.....\$1.00
Six Months, 26 copies, postpaid.....60 cts.
Canadian subscriptions 50 cents a year extra for postage.

Always send money by draft, postoffice money order, registered letter or by express. We will not be responsible for money sent in letters. Address all communications to, and make all drafts, checks and postoffice orders payable to, the Lawrence Publishing Co.

RATES OF ADVERTISING:

40 cents per line agate measurement, or \$5.60 per inch, each insertion, with reasonable discount on orders amounting to \$24 or over. No adv't inserted for less than \$1.20 per insertion.

75¢ No lottery, quack doctor or swindling advertisements inserted at any price.
Entered as second class matter at the Detroit, Michigan postoffice.

COPYRIGHT 1911

by the Lawrence Pub. Co. All persons are warned against reprinting any portion of the contents of this issue without our written permission.

WE GUARANTEE to stop THE MICHIGAN FARMER immediately upon expiration of time subscribed for, and we will pay all expenses for defending any suit, brought against any subscriber to The Michigan Farmer by the publisher of any farm paper, which has been sent after the time ordered has expired, providing due notice is sent to us, before suit is started.

Avoid further trouble by refusing to subscribe for any farm paper which does not print, in each issue, a definite guarantee to stop on expiration of subscription.

The Lawrence Pub. Co.,
Detroit, Mich.

DETROIT, JULY 22, 1911.

CURRENT COMMENT.

The scourge of fire Forest Fires in which northern Michigan has suffered during the past fortnight is such as to excite the sympathy of every citizen who lives in more fortunate environments. It is but a repetition of many like disasters which have heretofore occurred during seasons of protracted drought, but fortunately attended with less loss of human life than was at first feared or than has marked the holocausts of former years. The property loss, has however, been heavy, owing to the total destruction of the two towns of Oscoda and Au Sable, and the more or less serious inroads of fire in other cities and towns in the northern country. Doubtless this property loss will be further augmented when full returns are secured from the scattered and isolated localities where settlers have lost their homes and personal property, to say nothing of the damage to standing timber.

This unfortunate occurrence has again demonstrated that the problem of controlling forest fires has not yet been solved in Michigan, notwithstanding the fact that its solution is annually becoming less difficult owing to the fact that repeated burnings in many sections have practically cleaned up the refuse left by the lumbermen in harvesting the timber crop. It is a commonly heard remark that the people of the stricken section are themselves largely to blame for the situation by starting fires in a dry time, and it is upon this theory that remedial legislation has been attempted in some instances. However, it must be remembered that the burning of refuse is necessary to the clearing of cut-over land, and that this refuse will burn only when it is dry. The settler cannot be expected to know that dry weather will continue indefinitely, and can scarcely be blamed for improving a favorable opportunity for doing this kind of work, so long as reasonable precautions are taken to prevent the spread of the fire, which will usually be observed as a means of self protection. Then, fires are often started along the railroads by sparks from the engines, and in many other ways which can scarcely be controlled by even the most drastic legislation.

Attempts have been made in other sections, and in a limited way in Michigan,

to control the fire situation by means of patrolling the forest territory, and in some cases the forest rangers so employed may have been the means of checking incipient fires that otherwise would have developed into destructive conflagrations. However, the inadequacy of this means to the desired end will be appreciated by all who are acquainted with the conditions in recently lumbered areas where the brush and refuse timber is left lying about to feed the flames, which, when once started are beyond the power of man to control. It would thus appear that any adequate solution of the forest fire problem must deal with this situation. It is not an easy problem to solve by any means, but so long as considerable areas of cut-over lands are allowed to remain as the lumberman left them, forest fires will not be uncommon during dry seasons. Doubtless the dangers may be lessened by wise legislation and rigid enforcement of laws calculated to reduce the danger to a minimum, but the real solution will lie in the rapid settlement of the cut-over lands of the state which are most valuable from an agricultural standpoint, and perhaps the placing of some obligation on the lumbermen as to the condition in which they leave the lands after cutting, as well as the exercise of suitable precautions against the spread of destructive fires on state owned lands. Such a course will also hasten the day when the reforestation propaganda, which has so many enthusiastic supporters at the present time, will become generally practicable.

The accounts of the annual school meetings, held in various sections of the state, as reported in the local papers, reveal the fact that as a general proposition, far too little interest is taken in this event by the citizens of the average locality. It is refreshing, however, to note exceptions to this general rule, and to read of school meetings at which there was a large attendance of interested citizens. Such a tendency is an indication of progressiveness which speaks well for the future of any community. In such cases good schools will uniformly be found, and while all of the citizens of a community may not and generally will not agree as to matters of school policy, after they have threshed out their differences at the annual school meeting they are apt to be far better satisfied with the result than is the case where a few conservative economists have been left in control of the situation to conduct the school as economically as possible, regardless of the important factor of efficiency.

But in such cases, the citizens who did not attend the school meeting have no right to complain. If they have neglected their duty and shirked their responsibility in this important matter they should not criticize the manner in which the schools of their community are conducted. The better method of procedure would be to take a quiet but active interest in the matter of working up a general sentiment in the community for the betterment of the schools, and be on hand at the annual school meeting next year to give that sentiment expression. The public schools of Michigan should not be lightly spoken of and it is far from our intention to belittle them in any manner. They have done a grand work and are still doing it. But owing to changed conditions, their average attendance has decreased to a marked degree in recent years, and their efficiency has perhaps been but barely maintained, when it should have been improved in many ways. In fact, we believe that the average efficiency of our rural schools is bound to be greatly improved, and as the school laws of the state now allow to the individual community the greatest latitude in the method of bringing about such improvement, the problem is largely a local one in every community, and a general local interest is required to bring about a desired degree of improvement in any case. It is for this reason that we would emphasize the importance of giving the rural school problem careful and serious consideration, to the end that the foundation of the progress of American agriculture and the preservation of American citizenship upon the highest plane may not be neglected through default.

At a hearing recently held by a congressional sub-committee for the purpose of giving the opponents of the parcels post an opportunity to present their objections, the expected opposition from representatives of country merchants, hotels, real estate

men and others who were alleged to be opposed to the proposition, did not materialize, for which reason the hearing was quickly concluded. A recent dispatch from Washington states that of the dozen persons who appeared before the committee, eight were hardware merchants, besides whom there were one farm implement dealer, one wholesale merchant, one commercial traveler and one editor of a merchant's trade journal. This lack of a showing of those who oppose the establishment of a parcels post should go far toward the placing of the opposition to such a move where it rightly belongs when the proposition again comes before congress. This alone, should be a great aid in securing the passage of a general parcels post bill.

There is also a good prospect that the establishment of a parcels post by the present congress will be strongly urged by the administration. This prospect is reflected in the recently reported action of Postmaster General Hitchcock in issuing an order which will increase the salaries of rural carriers from \$900 to \$1,000 on routes of standard length, with proportionate increases for carriers on shorter routes. An appropriation of \$4,000,000 was made by the last congress for this purpose, but its expenditure was left to the discretion of the Postmaster General. It is said by those who are in close touch with the situation that the increase has been granted in view of the probable establishment of a parcels post, which would greatly increase the work of the rural carriers. It is certain in any event that the fight for an adequate parcels post will be continued with vigor during the coming regular session of congress, and we believe that there is a better prospect of success than ever before.

Under an agreement reached last week by the several factions in the United States Senate, the first act in the Canadian reciprocity drama will be closed before this issue reaches the reader. By the terms of that agreement, the bill will come to a vote on July 22, and while it is possible that complications may arise before that event occurs, the present prospects are that the bill will be passed in its present form, as all attempts to amend it have so far failed. But whatever the final action of our congress, public opposition to the pact in Canada has been growing, fostered by the many and varied claims of our administration that it will be beneficial to the farmers of the United States as well as the other interests involved. It is freely prophesied by public men of prominence in Canada that it will not be passed by the Canadian parliament without long discussion, and possibly not without an election in which this pact will be the issue and through which the will of the Canadian people will be voiced.

Be that as it may, however, in the event of the approval of the pact by our congress, its effect will be discounted, as indeed, we believe it already has been to no small degree. It appears to be reflected in the recent downward trend of our wheat market, and the large increase in the visible supply of that grain, which would indicate that holders of wheat are marketing the grain with unusual freedom for this season of the year, and it may be expected to exert a notable influence in other markets as the season progresses.

HAPPENINGS OF THE WEEK.

National.

At the recent elections held in Utah when 110 cities voted on local option, 87 of the municipalities voted "dry."

The United States senate has agreed to vote upon the Canadian reciprocity bill on Saturday of this week, and the special session of congress will end on August 7.

Rains last week put an end to further danger of forest fires in Michigan. The cities of Oscoda and Au Sable on the opposite banks of the Au Sable river where that stream flows into Lake Huron, were practically wiped out by flames last Tuesday. Smaller fires were reported in most of the counties composing the northern half of the lower peninsula, and but for the timely rains a grave situation would have developed, since every combustible material was dried thoroughly and would have made fighting the flames exceedingly hazardous.

The precipitation of moisture over the southern part of Michigan on Saturday and Sunday last was the salvation of crops in many sections and undoubtedly saved to the farmers millions of dollars.

Seven persons were hurt in a wreck when the Buffalo and Pittsburg flyer went into a ditch near Farmersville, N. Y.

The Rio Grande river is flooding its banks, owing to heavy rains along its

course. Houses have been washed away in some of the Mexican border towns.

The post office department after making tests of postal savings banks in second-class post offices has decided, because of the success accompanying the experiments so far, to try depositories in first-class offices, so banks will be established in New York, Chicago, St. Louis and Boston.

The confederate and federal soldiers will likely hold their next reunion together; commanders having the matter in charge will take active interest in making arrangements for such a gathering.

The Saginaw common council will consider a milk ordinance this week looking toward the substitution of milk bottles for milk cans as containers for the distribution of milk to city patrons.

Because of the contention that Long Island Sound is a menace to New York from a strategic standpoint the naval department has planned to give naval men a chance to try out the arguments by having a battle between details of the Atlantic fleet at Gardiner's Bay, which is at the eastern extremity of Long Island.

The measure providing for the publication, previous to election, of all expenses incurred by candidates for office was passed by the U. S. Senate on Monday. Some important amendments, making the measure the most drastic that has yet been drawn, were made by the Senate, thus making the concurrence of the House necessary to its final enactment.

In compliance with the new state law, Dr. Dixon, secretary of the state board of health, has notified all railroads, steamship lines and other companies who have for their purpose the conveyance of the public, that after July 20 they must discontinue the use of public drinking cups in their conveyances or places of business.

The government began suit, on Monday of this week, to compel a bona fide dissolution of the Reading Railway Company from the Reading Coal Company. This action parallels a recent one against the Lehigh Valley railroad and is the government's second move in its new fight to separate the coal carrying railroads from their virtual control of the coal business.

Foreign.

Northern Luzon has been swept by a typhoon which is considered the worst that has visited that part of the world in years. Details have not been communicated because of the bad condition of cables and wires in the path of the storm and vessels were unable to enter the harbor of Manila.

It is stated through news from Paris that 2,300 persons have died of cholera in Palermo, Italy, since May. Although the disease has been raging there, news of its work has been suppressed and kept from the world, as it was feared that knowledge of it would greatly diminish the number of visitors to Italy.

In Mexico the new regime is having some difficulty in establishing its appointees in local sections where the sentiment for Diaz was strong; however, it seems that progress is being made and that in time the federal and local state governments will be running smoothly. The massacre of Chinese at Torrens during the closing days of the revolution is likely to result in the exclusion of the celestials from the republic—that episode bringing the question to the front and showing the attitude of the Mexicans toward the foreigners. The labor problem is also pressing for consideration, the standard of wages over the land being below what laborers think it should be. In many instances strikes resulted in victories for the wage earners, which are encouraging others to try.

The Belgian aviator, Oleslagers, on July 17, made a monoplane flight of 388 miles without a stop, breaking the world's record for distance in an uninterrupted flight.

SOIL AND WHEAT SPECIAL TRAIN.

The Michigan Agricultural College, with the co-operation of the State Millers' Association, will run a Farmers' Institute Train to be known as the "Soil and Wheat Special," through Southern Michigan during the first two weeks in August. The train will consist of three coaches in which short lectures on subjects relating to wheat culture will be given, and four express cars in which the exhibits will be displayed. The lectures will treat of the best methods of handling the soil so that it will produce the maximum yield of wheat. The average yield of wheat in Michigan is less than one-half of that secured by the best farmers. Such other topics as manures and fertilizers, varieties, and cultural methods, including treatment for smut and other troubles will be considered. There will be a practical miller on the train who will speak upon the qualities desired in wheat by millers, and for which they can pay the best prices. One of the lecture cars will be for the ladies. It will be in charge of an expert who will demonstrate the handling of winter wheat flour for making bread and pastry, with the idea of extending the use of Michigan flour made from Michigan wheat. The exhibit cars will be used to illustrate the lectures. Samples of soil handled in different ways will be shown, also types of varieties of wheat in grain and straw, labor-saving kitchen utensils, farm libraries, etc., will be shown. The State Board of Health will so fit up a car to illustrate the manner in which some of the more dangerous communicable diseases are spread, and methods of controlling them. While the train is especially for those interested in wheat culture every one will be welcome.

The full schedule of meetings to be held during the entire two weeks will be published in the next issue.

FARMERS' CLUBS

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—B. A. Holden, Wixom.
Vice-Pres., J. D. Leland, Corunna.
Secretary—Mrs. C. P. Johnson, Metamora.

Treasurer—Mrs. Lewis Sackett, Eckford.
Directors—A. R. Palmer, Jackson; Wm. H. Marks, Fair Haven; C. L. Wright, Caro; E. W. Woodruff, Blanchard; C. P. Johnson, Metamora; Patrick. Hanked, Munith.

Associational Motto.—

The skillful hand, with cultured mind,
is the farmer's most valuable asset.

Associational Sentiment.—

The farmer, he garners from the soil
the primal wealth of nations.

YEARLY PROGRAMS.

Not a little originality is shown in the development of the yearly printed program by the local Clubs of the state that have gotten into the excellent habit of providing such a convenience for their members. The latest of these printed programs to come to the editor's desk is that of the Odessa Farmers' Club, of Ionia county. Instead of being in the form of a booklet, which form is in most common use by the local Clubs of the state, this program is printed on heavy embossed cards, three by five inches in size. These cards are three in number, are of different colors, have rounded corners and are tied together with a small ribbon passed through holes punched for the purpose in the upper left hand corner of the cards. The first, or title page of the program as thus bound, bears the name of the Club and the year for which the program serves, together with the names of the officers and the order of business to be followed at the meetings. The regular date of the monthly meeting is also given as the second Saturday in each month, and announcement is made of the fact that from October to March, inclusive, the meetings are called at 10 o'clock a. m., while from April to September afternoon meetings are held, these being called to order at two o'clock p. m. On the succeeding pages of the program, for which both sides of the cards are used, appear the programs for the several meetings of the Club, two of which are given on each page. The questions announced for discussion are uniformly of a practical or educational nature, two questions being announced for discussion at almost every meeting. In each case the question is assigned to some member for presentation to the Club, while another member is designated to lead in the discussion. In some cases where the question is one which admits of that form of debate a member is also assigned to the task of presenting the negative side of the question, thus insuring a degree of interest in the discussions which could hardly be attained by any other plan. The farms of the members are apparently not generally named, or if such is the case the farm name is not used in the programs in connection with the names of host and hostess, which appear at the head of each monthly program. Roll call is responded to in a variety of ways, as is customary in many Clubs, thus giving this routine feature of the meetings added variety and interest. A feature of nearly every monthly program which is worthy of special mention is designated as "Reading Course." Its place is uniformly near the close of the program, after the discussions have been disposed of, and is apparently a feature which is found to add something of interest to the literary portion of the programs of this Club. A vacation is taken in July, and an annual picnic is held in August, for which no special program is given on the cards which make up the yearly program of the Club. Other special features of the year's work are confined to a young people's meeting in February, the program for which is placed in the hands of a committee which is announced in the space for the meeting of that date. The programs are made complete, including the assignments for literary and musical features. The calendar year is made the fiscal year of the Club, but the officers are elected at the November meeting at the same time as the delegates to the Associational meeting are chosen. The program is well planned and well printed, and is both serviceable and attractive.

CLUB DISCUSSIONS.

Discuss Soil Fertility.—The Salem Farmers' Club, of Washtenaw county, held its June meeting at the pleasant home of Mr. and Mrs. Lloyd Pebbles. The program consisted of music by our male quartette, recitations and select readings. As before announced, the subject for discussion was "Soil Fertility." The discussion was opened by a paper by Herbert Smith. He said the farmer is beginning to see that he must buy more of his fertility, must invest more in potash, phosphorus, etc. Mr. Smith said the two points he would emphasize are "deeper cultivation," and "putting something back to the soil every time." Chas. Ross followed. He said the first five inches of soil would do for him, if properly handled. This would yield better results with less labor and less fertilizer. A large number took part in the discussion. Rev. Knowles told of the methods used in England to reclaim worn out soils. Robert Ross spoke against the idea that commercial fertilizer is simply a stimulant. He said if you take white sand with positively no fertility in it, it can be made to produce a good crop by adding commercial fertilizer. He had learned this from actual experience and while living in Florida where it is just as necessary that the farmer buy fertilizer as tools or seed. He said you might say you stimulated a horse by feeding him oats. The Club had previously decided to celebrate the Fourth, but so many counter attractions appearing, it was decided to give it up. Adjourned with music. The Club takes a vacation this July and August.—Cor. Sec.

The Pioneer Meeting of the Hadley and Elba Farmers' Club, of Lapeer county, held July 4, was the largest in the history of the Club. Nearly 200 partook of the bountiful dinner and many came for the afternoon. Short speeches on various phases of pioneer life were given as follows: Schools, Mrs. E. J. Snook; Social Life, Mrs. Bayley; M. E. Church, Carl Bullock; Home Life, Rev. Barnum; Farming, J. W. Tower; Baptist Church, R. J. Pierson. Annie Laurie was beautifully rendered by Miss Alta Hefflebower, of Lapeer, and C. P. Johnson brought the house down with his "Singin' Skewie." Callithumpians, races, ball games, etc., provided entertainment in the afternoon and a beautiful display of fireworks in the evening concluded one festive day.—Mrs. C. P. Johnson, Cor. Sec.

A Profitable Picnic Meeting.—The Wixom Farmers' Club, of Oakland county, held their second annual picnic at Wixom, July 4. A large crowd was there. Visitors from Saginaw, Flint and Pontiac gathered with the Club to celebrate the day. As the day was very warm the grove opposite the hall was used to good advantage. In the afternoon we listened to recitations and music. Our president read two letters on the reciprocity question, one from our representative, S. W. Smith, the other from Senator Charles Townsend. A motion was made to give Mr. Smith three rousing cheers for his loyalty to the farmers on that question. None were offered for Senator Townsend. Two ball games were played by the Milford and Wixom teams, and the field sports completed the program for the day. Although very warm and tired, everyone had enjoyed a pleasant and profitable day.—Mrs. R. D. Stephens, Sec.

Assyria Farmers' Club met at the pleasant farm home of Mr. and Mrs. Ernest Dingman, June 24. Owing to the fact that farmers were busy with their haying there were only 80 present to partake of a most excellent dinner and listen to a fine program. Rev. Roy Wolf gave us a short talk on "Farming in the Upper Peninsula." He also talked on the temperance question and the talks were appreciated by all. Songs, instrumental music, recitations and readings followed. J. M. Knapp, of Bellingham, Washington, gave a very interesting talk on his travels on the Pacific coast, which was fine and very much appreciated. Miss Greta Wolf favored us with a fine oration. The Club adjourned to meet with Mr. and Mrs. W. E. Brown the fourth Saturday in July.—Mrs. John Hill, Reporter.

Will Hold August Picnic.—At the February meeting of the Odessa Farmers' Club, the resignation of A. E. Leigh as vice-president was tendered, and accepted with regret. Mr. Leigh moved to Danby. Ernest Beard was elected to fill the vacancy. In March Mrs. M. L. Foght, one of our charter members, passed to the great beyond. She was a faithful Christian worker and leaves a large family to mourn the loss of a mother and grandmother. April 15 we were called to mourn the loss of Miss Mable Curtis, our faithful young secretary, after an illness of about one year's duration. Deceased was the only daughter of Mr. and Mrs. H. E. Curtis. Miss Alice V. Durkee was elected to serve as secretary the remainder of the year. On account of illness and the excessive heat, together with the fact that it was a very busy time, no meeting was held in June, but all are looking forward to the good time to be had at the annual picnic to be held the second Saturday in August. The place of meeting has not been decided upon as yet but we anticipate that it will be in the grove at Lake Odessa.—Lottie M. Durkee, Cor. Sec.

The Ceresco Farmers' Club met in July with Mr. and Mrs. Alonzo Drake. There were only about 50 present as the men were detained because of the busy time of the year. A very elaborate dinner was served, after which the meeting was called to order by President A. B. Mills, followed by a prayer by the Rev. A. Watson Brown, of Marshall. "America" and the "Star Spangled Banner" were sung by the Club and a history of the latter was given with a criticism of the music. Some good literary numbers were rendered.

GRANGE

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

THE JULY PROGRAMS.

Suggestions for Second Meeting. (Men's Part).

Song.
What is the best tool I use?
Which would be more profitable, a riding plow or a vacuum cleaner?
Solo, in pantomime.
Which would probably be the best investment, a hay-tedder, a manure spreader, or an acetylene gas plant?
What would be the comparative advantages of a set of reading-course books, and a baseball and bat?
If you had your choice, would you choose an automobile or a college course, and why?
Review of the best farm paper I read.
Instrumental music.

(Women's Part).

Duet.
Does education unfit girls for farm life?
Selections from the best woman's paper or magazine I know.
What is the best drink to send to the field with lunch on a hot day?
What constitutes good and bad manners at the telephone?
Illustrated reading.

(Good Things to Eat).

Custards (with samples) served by five women.
Wafers (with samples) served by five men.

BOOST YOUR GRANGE.

Does not this heading rightly interpret the slogan which I find on the letter-head of Raisinville Grange? This slogan in full is, "The Booster, Best Grange in the State." It is the ideal with which this Grange down in Monroe county, in the southwest corner of Michigan, started out at the beginning of 1911. They are still working under this banner, in a prosperous condition and are pulling together for the principles for which the Grange stands. On the evening of June 21, 22 new members were added to this Grange and, after initiation, a banquet was served to 200. This makes a membership of 340 with the expectation of making it 350 soon. A great picnic and rally is planned for August. The members of Raisinville Grange claim that they own and use the best Grange hall in Michigan. I have seen the hall and know of no one who disputes the claim. The master is F. H. Kinsting, the lecturer, Mrs. Kate Klime, the secretary, David Weinau.

Now, is that not a fine hot-weather report for a Grange to make? No hint of any summer vacation here. Letter written on tasty, business-like letter-head. Hall commodious, airy, inviting, with stage for theatricals, musical instruments, good equipment, dining-room and kitchen below, and a membership of over 300. You do not need to ask if there are young people in this Grange and if they can be gotten to take part in the meeting. You know there must be, and that they are the life of the Grange. You can fairly hear them sing and see them do degree work with pride and efficiency. In short, you know, without my saying it, that here in very truth, the Grange is serving as a social center and is doing well its part in country community building.

JENNIE BUELL.

AMONG THE LIVE GRANGES.

An Auction Sale will be conducted by Wilson Grange, of Charlevoix county, a committee to arrange for same having been appointed at a recent meeting.

Six New Ones in Kalamazoo.—A meeting of the newly organized Kalamazoo Pomona for the purpose of completing the organization and the transaction of routine business will be held at Kalamazoo, Thursday, August 17. It is expected that an open session will be addressed by State Master Hull. Plans will also be made for the future work of the organization. Through the efforts of Deputy Pound six new Granges have been organized during the last few months, making a total of ten subordinates in the county. The Pomona officers expect to have the organization in shape to do its share towards the entertainment of the State Grange next fall.—E. F. Stoddard.

School Matters occupied the attention of Star Grange, of Gratiot county, at its first July meeting. "What shall we do with and for our small rural schools?" was discussed by Messrs. Hale, Bailey and Witherell. They favored building up the local schools to the highest possible standard as the surest and best means of combatting the movement toward the centralization of such schools, such centralization being considered undesirable.

In answer to the question, "Is there adequate provision made for farm children's play, at home and at school?" the consensus of opinion seemed to be that there is abundant room for advancement along those lines.

Leelanau Pomona met at Empire, July 12, and held a good meeting. D. H. Day and John I. Gibson, president and secretary respectively of the Western Michigan Development Bureau, spoke on the work being done by their organization. Master N. P. Hull spoke on "Reciprocity," D. E. McClure on "Live to Help and Help to Live," J. W. Warner on "Mammon and Money." A most entertaining feature of the meeting was a paper prepared and read thirty-one years ago by Mrs. Harriette Fisher, now eighty-five years of age. The paper was originally prepared for and presented at an anniversary Grange meeting, and was read on this occasion in a most vigorous voice and pleasing manner.—Eva King, Sec.

Meritorious Programs.—Fruit Ridge Grange is fortunate in having for its present lecturer, Former State Master Horton. As a result this Grange is placing the standard for lecture work on a very high plane, its programs so far this year being models from which every lecturer in the state might easily glean helpful suggestions. That this Grange had a stirring patriotic meeting on July 1 is evident from the program which Bro. Horton prepared for that occasion. Space will not permit reproducing in its entirety the neatly printed program which bore a cut of "Old Glory" at its head and the words of the patriotic songs used. The hall was appropriately decorated in the national colors, each person present was presented a miniature flag for a lapel souvenir, and attention was given to the seating of the audience in order that the flag exercises might be carried out with most pleasing and telling effect. Lecturers will be interested in the make-up of the program proper, which was as follows:

Patriotic medley, "Yankee Doodle" and "America," piano and cornet, Lulu Roberts and Evans Russell.

Singing "America" by the audience as a closing to the above instrumental introductory.

Introductory remarks, Sam W. Horton. "Song of a Thousand Years," Barnard P. Thomas. Audience join in the chorus.

Grand entree and formal introduction of George and Martha Washington.

Singing "Columbia the Gem of the Ocean," full children's chorus.

Introduction of George Washington, Harry Hayward.

Introduction of Martha Washington, Mrs. Ada Snyder.

Cornet solo, "The Star Spangled Banner," Evans M. Russell.

Address, "The farmer and his family considered socially, industrially and influentially," Hon. Henry C. Smith.

Song, Washington and Lincoln, Barnard P. Thomas.

Clam Lake Patrons Rally in Spite of Circus.

Clam Lake Grange held a very successful rally on Thursday, July 13. The day was fine. The grove in which the meeting was held is located 3½ miles from the city of Cadillac and is an ideal place in which to hold such a gathering. A great circus, comprising 57 cars, had taken possession of the city in the morning and people were gathering in throngs, coming by train, in heavily loaded wagons, and in automobiles. Indeed, it seemed that the rally must be postponed but when we reached the grounds we found a pleasant company in waiting, though the hour was early.

In his address of welcome the master said that they had arranged for the rally and advertised it before they knew of the coming of the circus; that the circus had made no offer to postpone their entertainment and of course the Grange could not give up the rally. The patrons present liked his courage and vigorously applauded him.

Clam Lake Grange has a good choir, composed of young people, and demonstrates what might be done in many another Grange if people would live up to their privileges. A very interesting local program was rendered, consisting of music, dialogues, recitations, etc., and the writer gave an address on "The Farmer of the Future."

Truly the Grange is a great institution, a great part of "the school out of school" for the men and women of the country.—W. F. Taylor.

"Grange Plays" is the title of a booklet, recently received, designed as an aid to ambitious lecturers who desire to attempt something out of the ordinary in preparing Grange entertainments. Its contents comprise dialogues, recitations and one-act plays compiled from high-class publications and suited to the use of Granges, literary clubs and young people's organizations generally. The compilation of this 30-page booklet is the work of the well known New York Grange correspondent, J. W. Darrow, and copies may be obtained through this paper at the publisher's price of 25 cents each.

COMING EVENTS.

Pomona Meetings.

Berrien County Granges' Annual Picnic, at Hegman Park, Benton Harbor, Saturday, July 29. D. E. McClure, state speaker.

Lenawee Co., with Gorman Grange Thursday, Aug. 3. Annual Grange rally.

Gratiot Co., with Arcadia Grange, Saturday, Aug. 5. Miss Jennie Buell, state speaker.

Charlevoix Co., with Boyne River Grange, Thursday, Aug. 10.

Kent Co. farmers' annual picnic, at John Ball park, Wednesday, Aug. 16. Former State Master Horton, state speaker.

MARKETS

DETROIT WHOLESALE MARKET.

July 19, 1911.
Grains and Seeds.

Wheat.—Foreign crop reports for June are all favorable to a good wheat crop. Conditions in Canada are, over most of the territory, flattering. There are 10,500,000 acres in wheat in the Canadian provinces, 9,500,000 of which is in the spring wheat district. This is an increase of 1,200,000 acres, and the prospects for a good yield are exceptionally favorable owing to opportune rains which have kept the ground well saturated ever since seeding, and to temperatures which have forced the crop forward with some local exceptions, such as light frosts reported in the Manitoba district during the fore part of July. The European situation is also reported as good. An increased area of wheat in the United Kingdom promises an average yield. France has a diminished area and Germany a relatively small wheat crop, but Spain is said to have an exceptional crop. The Hungarian crop is estimated at 163,000,000 bushels. In Roumania and the Balkan states the prospects are better than in average years. Medium results are expected in Russia, while Italy has a prospect for better yields than last year. In Argentina the new sown crop is said to have germinated well under the influence of timely rains, while in British India the monsoon, which is the necessary forerunner to a favorable seed time broke in mid-June and heavy rains have fallen over wide areas. Bearish news which caused a slump in the market last week was to some degree offset by reports of black rust in Minnesota and frosts in the northwest on Tuesday, but heavy marketings of winter wheat and a break in coarse grains prevented any advance. Prices are now on an export basis, and the future of the market will depend on the condition of the spring wheat crop. No. 2 red wheat closed in this market one year ago at \$1.08½. Quotations for the week are:

	No. 2	No. 1	Red.	White.	Sept.	Dec.
Thursday	86½	84	89½	93½		
Friday	84½	82	87½	91½		
Saturday	85	82½	87½	91½		
Monday	85½	82½	87½	91½		
Tuesday	85½	82½	87½	91½		
Wednesday	84½	81½	86½	90½		

Corn.—Heavy rains west of the Missouri river, with timely showers in other sections of the country where the growing crop was suffering severely from the drought caused heavy selling of corn and a sharp decline in this market on Tuesday, following the advance of the previous week. One year ago No. 2 corn sold in this market at 64½c. Quotations for the week are:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	67½	68½
Friday	68½	69½
Saturday	68½	69½
Monday	68½	69½
Tuesday	67½	68½
Wednesday	67½	68½

Oats.—This market was affected by the drop in corn, as well as the fact that the crop is well beyond the effect of weather conditions over a wide area of the country. While the crop will be light in some sections and official estimates indicate that the season's crop will be 12.3 per cent less than the average for the past five years, yet with a good crop in other sections and prospects of a large production in the Canadian northwest the market declined three cents on Tuesday. Standard oats closed at 47½c in this market one year ago. Quotations for the week are:

	Standard	No. 3
		White.
Thursday	50	49½
Friday	51	50½
Saturday	51	50½
Monday	51	50½
Tuesday	47	46½
Wednesday	47½	46½

Beans.—There has been no change in this market during the week, although reports from the country indicate that the last of the crop is moving from first hands at \$2 per bu. Current quotations follow:

	Cash.	Oct.
Thursday	\$2.20	\$2.10
Friday	2.20	2.10
Saturday	2.20	2.10
Monday	2.20	2.05
Tuesday	2.20	2.05
Wednesday	2.20	2.05

Clover Seed.—Quotations remain nominal, it still being too early for crop prospects to directly influence the market. Current quotations are:

	Prime.	Oct.	Alfike.
Thursday	\$9.75	\$9.50	\$9.00
Friday	9.75	9.50	9.00
Saturday	9.75	9.50	9.00
Monday	9.75	9.50	9.00
Tuesday	9.75	9.25	9.00
Wednesday	9.75	9.50	9.00

Rye.—No. 1 is quoted at 77c per bu. Market dull.

Visible Supply of Grain.

	This week.	Last week.
Wheat	29,153,000	26,518,000
Corn	10,581,000	11,791,000
Oats	12,061,000	14,368,000
Rye	17,000	17,000
Barley	767,000	817,000

Flour, Feed, Provisions, Etc.

Flour.—Market is slow with prices steady. Quotations are:

Clear	\$4.75
Straight	4.65
Patent Michigan	4.90
Ordinary Patent	4.90

Feed.—Corn products have advanced strongly due to the recent rise in this grain. Carlot prices on track are: Bran, \$27 per ton; coarse middlings, \$26; fine middlings, \$28; cracked corn, \$29; coarse corn meal, \$29; corn and oat chop, \$20 per ton.

Hay and Straw.—Outside quotations on best timothy show a \$1 gain. Mixed clover also higher. Straw holding last week's advance and steady. Quotations on baled hay in car lots f. o. b. Detroit are: No. 1 timothy, \$21@23; No. 2 timothy, \$20; clover, mixed, \$19@20; rye straw, \$8.50; wheat and oat straw, \$7.50 per ton.

Potatoes.—Recent rains have brought an easier feeling in this market but prices show no change. Old stock very scarce and of poor quality. Quoted at 70@80c per bu. in car lots. New, \$1.85@1.95 per bu.

Provisions.—Family pork, \$17@17.50; mess pork, \$16.50; medium clear, \$16@17; smoked hams, 16@16½c; briskets, 10½@11½c; shoulders, 10½c; picnic hams, 9½c; bacon, 15@16c; pure lard in tierces 9c; kettle rendered lard, 10c per lb.

Dairy and Poultry Products.

Butter.—Best creamery is firmly holding last week's advance while lower grades and dairy butter have moved up a cent. Market very firm. Quotations: Extra creamery, 24c; firsts, do. 23c; dairy, 18c; packing stock, 17c per lb.

Eggs.—The percentage of eggs which do not pass muster when placed before the candle is running so large that the quotation on current receipts has been reduced a full cent. Demand good and market steady. Fresh eggs, case count, cases included, are quoted at 14½c per dozen.

Poultry.—The supply shows something of an increase this week but the demand continues sufficient to hold the market steady at former values which are several cents in advance of those ruling in other big markets. Quotations are: Live—Hens, 13@14c old roosters, 10c; turkeys 14@15c; geese, 8@9c; ducks, 12@13c; broilers, 20@21c per lb.

Cheese.—Michigan, old, 17c; Michigan, late, 13@14c; York state, new, 13½@14c; Swiss domestic block, 16@18c; cream brick, 13@14c.

Veal.—Market steady at last week's advance. Fancy, 10½@11c; choice, 8@9c per lb.

Fruits and Vegetables.

Cabbage.—Steady. Selling at \$2.75 per bbl. for new.

Pineapples.—\$3.50@3.75 per case.

Currents.—In light supply and selling at \$3@3.50 per bu. for red.

Blackberries.—Quoted at \$1.50@1.75 per 16-qt. case.

Cherries.—Offerings small. Quoted at \$2@2.25 per bu.

Raspberries.—Little change in prices. Offerings light and of inferior quality, due to dry weather. Red, \$4@4.50 per bu; black, \$1.50@1.75 per 16-qt. case.

Huckleberries.—In fair supply but poor in quality. Quoted at \$1.75@2 per bu.

Gooseberries.—Steady. Selling at \$1 per 16-qt. case.

Apples.—New Michigan grown quoted at \$1@1.50 per bu.

OTHER MARKETS.

Grand Rapids.

Local egg dealers are paying 15c for fresh stock, with offerings light. Dairy butter is worth 19c, creamery 24c. Live fowls are worth 10c. New hay, timothy, is bringing \$14@16. A few early Alexander peaches were sold on the city market Tuesday morning at 35c per small basket. Plums are also coming in a small way. Selling at \$3 per bu. Other fruits on the market range as follows: Blackberries, \$1@1.25; huckleberries, \$1.75; red raspberries, \$1.75; black raspberries, \$1.40; cherries, \$1.75; currants, \$1.40; apples, 50c@\$.1. New home-grown potatoes are still scarce, selling readily at \$1.75 per bu. Celery is worth 15c; sweet corn, 10c. The mills are paying 77c for new No. 2 red wheat.

New York.

Butter.—Despite the fact that other big markets remain unchanged from last week, conditions here have forced an advance of a full cent on creameries. Creamery specials quoted at 26@26½c; extras, 25@25½c.

Eggs.—Market steady with stock of extra quality bringing slightly higher figures. Fresh gathered extras, 20@23c; firsts, 15@16c; seconds, 13½@14½c; western gathered whites, 17@20c.

Poultry.—Dressed Steady. Turkeys, 12@15c; fowls, 11@16c; western broilers, 18@23c.

Chicago.

Wheat.—No. 2 red, 84½@85½c; Sept. 87½c; Dec. 90½c per bu.

Corn.—No. 2, 64@64½c; Sept., 63½c; Dec., 60½c per bu.

Oats.—No. 2 white, 43@44c; Sept. 42½c; Dec., 44½c.

Barley.—Malting grades, \$1@1.15 per bu; feeding, 70@80c.

Butter.—Extra quality butter is scarce and the market holds very firm on such grades. Trade quiet in everything below extras; prices unchanged; Quotations: Creameries, 19@24c; dairies, 18@22c per lb.

Eggs.—Miscellaneous receipts of eggs vary so in quality that the range in quotations has been materially widened, 11½c being the top price for such offerings and 5c the low mark. Better grades remain unchanged. Quotations: Prime firsts, 15½c; firsts, 14½c per doz; at mark, cases included, 5@11½c.

Potatoes.—Receipts of new stock continue to increase and prices are slightly lower. Old stock no longer quoted in this market. Good to choice new now selling at \$4.25@4.75 per bbl.

Beans.—Pea beans are holding firm at recently advanced figures. Red kidneys

are quoted higher this week. Choice hand-picked pea beans are quoted at \$2.28@2.32 per bu; prime, \$2.10@2.20; red kidneys, \$3.50@3.85 per bu.

Hay and Straw.—Another advance of \$1 per ton on all grades of hay is recorded. Market firm. Straw unchanged. Quotations: Choice timothy, \$25@26; No. 1 timothy, \$22.50@24; No. 2 do. and No. 1 mixed, \$20@21.50; No. 3 do. and No. 2 mixed, 16.50@18; rye straw, \$8@8.50; oat straw, \$6.50@7; wheat straw, \$6@6.50 per ton.

Boston.

Wool.—Stagnation is the word that is still being generally employed in describing the condition of the market, although there is some movement of stocks to the mills and light purchases are being made in a few of the growing sections. Some new territory wools are reported to have been purchased on a basis of 45@48c clean in Boston. But sales of territory are being made in odd lots and fleece wools are in limited demand. The leading quotations range as follows: Ohio and Pennsylvania fleeces—Delaine washed, 29@30c; XX, 27@28c; fine unmerchanted, 21@22c; ½-blood combing, 25@26c; ¾-blood combing, 24½@25½c; ¼-blood combing, 24c bid; delaine unwashed 24@25c; fine unwashed, 20@21c. Michigan, New York and Wisconsin fleeces—Fine unwashed, 18@19c; delaine unwashed, 23½@24c; ½-blood unwashed offered at 25c. Kentucky, Indiana and Missouri—¾-blood offered at 24c; ¼-blood, 23@24c.

Elgin.

Butter.—Market firm at 24c per lb., which is last week's quotation. Output for the week, 1,023,400 lbs., as compared with 1,079,000 lbs. for the previous week and 1,073,334 lbs. for the corresponding week of last year.

THE LIVE STOCK MARKETS.

Buffalo.

July 17, 1911.

(Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of stock here today as follows: Cattle, 155 cars; hogs, 11,200; sheep and lambs, 8,000; calves, 1,800.

With 155 loads of cattle on our market here today, and 26,000 reported in Chicago, everything of good quality of all grades sold strong with last week. All others sold weak to 15c, and in many instances 25c per cwt. lower. Strange to say, with 155 cars on this market, there wasn't a single load of prime cattle here today.

We quote: Best 1,350 to 1,600-lb. steers, \$6.50@6.65; good prime 1,200 to 1,350-lb. steers, \$6.15@6.40; best 1,100 to 1,200-lb. shipping steers, \$5.50@6.10; medium butcher steers, 1,000 to 1,100, \$5.10@5.50; light butcher steers, \$4.60@5.15; best fat cows, \$4.75@5.25; fair to good do. \$3.50@4.25; common to medium do. \$3@3.50; trimmers, \$1.50@2.75; best fat heifers, \$5.50@5.75; good do. \$4.85@5.25; fair to good do. \$4@4.75; stock heifers, \$3.25@3.50; best feeding steers, dehorned, \$4@4.25; common feeding steers, dehorned, \$3@3.25; best butcher and export bulls, \$4.50@5; bologna bulls, \$3.50@4; stock bulls, \$3@3.25; best milkers and springers \$5.50@6; common to good do. \$2@3.00.

Good milkers and springers from \$3@5 higher. Common kind hard to sell at satisfactory prices.

Today's hog market ruled active with prices generally about the same as the close of last week. The bulk of the good quality yorkers, mixed, medium and heavies selling at \$7.15, with some of the commoner grassy grades running around \$7@7.05. The light yorkers sold mostly at \$6.90@7, and pigs generally at \$6.80@6.85, with the strong weight choice quality up to \$6.90. The good kind of rough sows went mostly at \$6@6.05; stags around \$4.75@5.25. Everything sold; Market closing firm; a few choice quality mixed selling late at \$7.20. Indications point to a fair trade for the balance of the week.

The lamb and yearling market opened steady today, and sheep active. The most of the choice spring lambs selling from \$7.25@7.50. Yearling lambs, \$5.50@5.75; few choice handy wethers selling at \$4.25@4.50. Prospects steady for sheep the balance of the week.

We quote: Best spring lambs, \$7.25@7.50; wethers, \$4.25@4.50; cull sheep, \$1.50@3; bucks, \$2.50@2.75; yearling lambs, \$5.50@5.75; handy ewes, \$3.50@3.75; heavy do. \$3@3.25; veals, choice to extra, \$8.50@8.75; fair to good do. \$7@7.50; heavy calves, \$3.50@4.50.

Chicago.

July 17, 1911.

Received today 26,000 34,000 22,000
Same day last year.. 26,392 22,767 34,099
Received last week.. 58,601 112,023 88,517
Same week last year.. 56,516 102,348 108,570

The week opens with a liberal supply of cattle, and buyers are discriminating against lots that are not fat, all ordinary lots being slow of sale, even at a decline of about 10c. Fat steers are fairly active at steady prices. Hogs are active at an average advance of 5c, buyers operating freely at \$6.20@6.90, these figures being little different from those paid Monday a week ago. Pigs are selling anywhere from \$5 to \$6.50, according to quality, with the heavier pigs selling the highest, as usual. Boars are taken at \$2.50@3, while stags sell for \$6.25@7.25, the heavier ones going highest, and all stags selling subject to 80 lbs. dockage per head. More mixed lots of hogs are showing up, and there is a widening tendency in prices, dry sections sending in many hogs that lack quality. The hogs marketed here last week averaged 230 lbs., compared with 245 lbs. a year ago and 224 lbs. two

years ago. The sheep and lamb market was active and firmer for fat lots, with spring lambs salable at \$2.50@7.25 for culls to prime lots. Ewes are salable at \$2@4.25, wethers at \$3.50@5.25, bucks at \$2@3 and yearlings at \$4.25@5.50. There was a sale of four double-decks of Idaho range yearlings that averaged around 90 lbs. at \$5.25, and the first Idaho range lambs of the season arrived, there being twenty double-decks, mainly of medium quality.

Cattle were marketed last week much too liberally, the largely increased offerings coming at a highly unfavorable time, as the hot weather checked the consumption of beef materially throughout the country. By the time that the decline culminated cattle were on an average 15@35c lower than a week earlier, with the bulk of the week's sales of beef steers at a range of \$5.50@6.70. The choicest beefs went at \$6.50@7, the top comparing with \$7.05 the preceding week, the decline being least marked in the best cattle, as they formed but a moderate share of the receipts. The commoner order of light, grassy steers went at \$4.70@5.50, while exporters purchased good to choice cattle at \$6@6.50. Good to prime little yearlings brought \$5.90@6.95, prime Hereford steers and heifers that averaged \$13 to \$61 lbs. going at the top price. Drought-stricken regions have been shipping large numbers of grassy cattle, especially to Missouri river markets, and sections farther north have been forced to sacrifice large numbers for the same reason. Butchering cattle shared fully in the decline, cows and heifers selling at \$3.30@6.10, cutters at \$2.75@3.25, canners at \$1.75@2.70 and bulls at \$2.85@5.40. Stockers and feeders have been offered at extremely low values, with liberal offerings, and the demand is starting up from some quarters, but trade cannot be called large yet. Stockers are selling at \$3@4.65; feeders at \$4@5.25 and stock and feeder cows and heifers at \$2.75@4.50. The great bulk of the stocker and feeder cattle sold much below the highest quotations, strictly good 500 to 600-lb. stock steers selling at \$3.75@4.15, and few country buyers were willing to pay above \$4.75 for the best feeders. Calves reached still lower levels, selling at \$2.75@7.25 per 100 lbs., and milkers and springers had a somewhat better outlet at \$30@60 per head. The time is now approaching when the demand for milk cows usually undergoes improvement, and already sections that have been visited with good rains are sending in buying orders.

Hogs, like cattle and sheep, were marketed with greatly increased freedom following the much lowered supplies furnished for Fourth of July week, and this made weak and lower prices at times, especially when eastern shippers operated less freely than usual. Monday was by far the great day of the week for the shipping trade, and about 3,500 hogs were shipped from here on that day. The market showed a rallying tendency usually after sharp declines in prices, and choice hogs were first to feel the effects of a quickened demand, as usual. The average grading of the hogs marketed was very good, and there was a strong demand for the choicest lots of hogs of light and medium weights, while rough, heavy packing lots went lowest of all, there being a wide spread in values. Stags sold at a good premium and pigs at a marked discount, prime barrows weighing 180 to 250 lbs. being great favorites. The packers have been manufacturing provisions freely of late, and stocks in the five principal western markets on July 1 aggregated 320,931,000 lbs., compared with 299,473,000 lbs. a month earlier and 197,996,000 lbs. a year ago. Stockmen are advised to not hold their hogs after they weigh much more than 225 lbs.

Sheep and lambs have been selling unsatisfactorily so far as the great bulk of the offerings were concerned for a week past. The percentage of prime spring lambs was small, as usual, and thin lots averaging 38 to 48 lbs. sold extremely low. The packers continued to receive large numbers of lambs direct from Louisville, and this caused local killers to pursue quite an independent course, making a weak market much of the time. As usual, the percentage of fed sheep showing up was small, but some good sized range shipments of yearlings were offered, being largely of the feeder class. Idaho range spring lambs have been received at Omaha and sold at good prices, most of them going at \$7.15@7.35 per 100 lbs. Dry weather has been forcing great numbers of fed stock on the market.

Horses were marketed in normal numbers last week, following extremely small supplies and a poor demand during Fourth of July week, and the auctions were resumed, after being temporarily abandoned. Buyers were present in good numbers, and the demand was quickened a good deal by the unusually large numbers of horses that succumbed to the terrific heat in recent weeks. The Knickerbocker Ice Company, which lost 200 horses from the hot weather had a good buying order on the market, and so did the Arthur Dixon Transfer Company, which had 267 horses burned alive in a recent fire. Small numbers of good drafters have been selling at \$200@225 per head, while a cheaper class sold freely at \$165@195, while wagoners sold at \$125@160 and inferior horses at \$75@100. Most of the drivers sold for \$125@190, and several six-year-old mares brought \$145@185. Pairs of work horses brought \$330@400. Good horses averaged \$5@15 higher.

Investigation goes to show that sheepmen who look after the mutton end of the industry are making good profits in many instances, while those who rely chiefly on wool are losing. The business of having large "crops" of lambs and fattening the wether lambs and some of the ewes lambs is generally paying.

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.

July 20, 1911.

Cattle.

Receipts, 822. Good grades active; others steady at last week's prices.

We quote: Best steers and heifers, \$5.50@5.75; steers and heifers, 1,000 to 1,200, \$4.75@5.25; grass steers and heifers that are fat, 800 to 1,000, \$4.25@5; do. 500 to 700, \$3.25@4; choice fat cows, \$4@4.25; good fat cows, \$3.50@3.75; common cows, \$3@3.25; canners, \$1.75@2.75; choice heavy bulls, \$3.75@4; fair to good bolognas, bulls, \$3.50@3.65; stock bulls, \$3@3.50; choice feeding steers, 800 to 1,000, \$4.50@4.75; fair feeding steers, 800 to 1,000, \$3.75@4.25; choice stockers, 500 to 700, \$4@4.25; fair stockers, 500 to 700, \$3.50@3.75; stock heifers, \$3@3.50; milkers, large, young, medium age, \$4@5.5; common milkers, \$2.50@3.5.

Bishop, B. & H. sold Goose 3 cows av 840 at \$3.25, 3 butchers av 716 at \$4.25; to Sullivan P. Co. 12 steers av 1,046 at \$5.25, 5 butchers av 836 at \$4.25, 4 do av 575 at \$4, 5 do av 944 at \$3.90, 1 canner weighing 750 at \$2.25, 3 bulls av 847 at \$3.60; to Mich. B. Co. 20 steers av 1,137 at \$5.75; to Parker, W. & Co. 6 cows av 863 at \$2.75, 1 bull weighing 1,160 at \$3.75; to Hammond, S. & Co. 9 butchers av 800 at \$4.25, 11 steers av 938 at \$5, 10 do av 950 at \$5.10, 1 canner weighing 770 at \$2; to Parker, W. & Co. 1 bull weighing 1,080 at \$3.75; to Marx 2 cows av 850 at \$3.75, 1 heifer weighing 720 at \$4.60; to Regan 5 do av 520 at \$3.75, 4 do av 575 at \$4, 2 do av 575 at \$3.50; to Kamman 3 butchers av 800 at \$4.90, 1 bull weighing 980 at \$4, 1 heifer weighing 780 at \$4.75; to Parker, W. & Co. 1 bull weighing 1,350 at \$3.75, 4 butchers av 805 at \$4.50, 4 cows av 945 at \$3.25, 2 steers av 915 at \$4.75; to Mich. B. Co. 16 steers av 1,155 at \$5.50, 7 do av 771 at \$4.50; to Breitenbeck 2 cows av 1,170 at \$4, 2 do av 885 at \$4.50; to Rattkowsky 6 do av 1,035 at \$3.75, 2 do av 875 at \$3.50; to Mich. B. Co. 21 butchers av 974 at \$5.25; to Mason 3 do av 810 at \$3.75; to Parker, W. & Co. 1 bull weighing 930 at \$3.50, 1 cow weighing 1,000 at \$3, 2 do av 910 at \$2.75; to Hammond, S. & Co. 13 butchers av 890 at \$4.25.

Haley & M. sold Goose 20 butchers av 396 at \$3.80; to Ray 12 feeders av 822 at \$4.65; to Regan 2 heifers av 625 at \$3.95; to Parker, W. & Co. 2 bulls av 1,025 at \$3.80; to Applebaum 3 butchers av 843 at \$4.10, 2 cows av 1,050 at \$4; to Schuman 1 bull weighing 750 at \$3.70, 1 steer weighing 770 at \$4.10, 1 do weighing 830 at \$4.70, 9 butchers av 744 at \$4.40; to Regan 4 do av 620 at \$3.75; to Applebaum 1 bull weighing 640 at \$3.35, 1 cow weighing 820 at \$3.25, 1 steer weighing 700 at \$3.75; to Lachalt 10 butchers av 837 at \$4.60, 2 do av 825 at \$4.40; to Sullivan P. Co. 8 do av 611 at \$3.60; to Mich. B. Co. 9 do av 766 at \$4.10.

Spicer & R. sold Goose 9 bulls av 595 at \$3.50, 6 butchers av 413 at \$3.25, 1 cow weighing 1,150 at \$3.25; to Hammond, S. & Co. 30 butchers av 810 at \$4.75; to Breitenbeck 6 cows av 910 at \$4.50, 2 heifers av 690 at \$4, 8 butchers av 885 at \$4.50.

Roe Com. Co. sold Sullivan P. Co. 3 butchers av 593 at \$3.85, 5 do av 850 at \$4.40, 1 bull weighing 1,260 at \$4; to Parker, W. & Co. 8 steers av 1,016 at \$4.75, 7 do av 824 at \$5, 2 cows av 1,125 at \$3.75.

Halstead sold Sullivan P. Co. 6 butchers av 678 at \$4.10, 1 heifer weighing 950 at \$5.

Veal Calves.

Receipts, 1,199. Market opened lower than on Wednesday; closing dull and 50@75c lower. Best, \$8@8.50; others, \$4@7.50; milch cows and springers steady.

Bishop, B. & H. sold Parker, W. & Co. 3 av 180 at \$8.25, 12 av 160 at \$8.75, 6 av 145 at \$6.50, 15 av 150 at \$8.25, 10 av 131 at \$6.50, 7 av 165 at \$8.50; to Goose 12 av 125 at \$5.25; to Sullivan P. Co. 3 av 140 at \$6, 20 av 155 at \$8.70, 8 av 155 at \$8.75; to Rattkowsky 12 av 140 at \$7.50, 5 av 250 at \$6; to Burnstone 10 av 155 at \$8.50, 3 av 168 at \$8.75, 13 av 145 at \$7.75, 10 av 161 at \$8.50, 2 av 160 at \$6; to Sullivan P. Co. 20 av 155 at \$8.25, 3 av 220 at \$5.

Spicer & R. sold Rattkowsky 2 av 215 at \$6, 14 av 150 at \$8.50; to Applebaum 14 av 145 at \$8.50; to Goose 2 av 115 at \$6, 21 av 150 at \$8; to Rattkowsky 10 av 148 at \$8, 3 av 212 at \$4.50; to Burnstone 8 av 145 at \$8.50, 10 av 167 at \$8.50; to Mich. B. Co. 16 av 140 at \$8.25; to Parker, W. & Co. 17 av 150 at \$8.25; to Goose 10 av 164 at \$6, 4 av 145 at \$8.25.

Roe Com. Co. sold Sullivan P. Co. 6 av 138 at \$8.25; to Thompson Bros. 21 av 145 at \$8.25; to Sullivan P. Co. 12 av 155 at \$8.75, 3 av 140 at \$6.

Haley & M. sold Parker, W. & Co. 22 av 170 at \$8.75, 8 av 150 at \$8, 6 av 155 at \$8.75; to Goose 5 av 125 at \$7.75, 2 av 230 at \$6.50, 6 av 148 at \$9.

Sharp sold Mich. B. Co. 3 av 112 at \$7, 4 av 155 at \$8.50.

Barnard sold Goose 13 av 140 at \$7.50. Boyle sold same 7 av 140 at \$8.25.

Halstead sold Sullivan P. Co. 3 av 180 at \$4.75, 13 av 160 at \$8.50.

Sheep and Lambs.

Receipts, 2,579. Market 50c lower than on Wednesday; 50@75c lower than last week. Best lambs, \$6.50@6.75; fair to

good lambs, \$6@6.50; light to common lambs, \$4@4.50; yearlings, \$4@4.50; fair to good sheep, \$3.50@3.75; culls and common, \$2@3.25.

Spicer & R. sold Mich. B. Co. 9 lambs av 65 at \$6.50, 14 do av 66 at \$7.25, 23 do av 68 at \$7, 7 yearlings av 105 at \$5, 12 sheep av 120 at \$3.25, 91 lambs av 75 at \$6.75; to Newton B. Co. 26 do av 68 at \$7, 25 mixed av 80 at \$4; to Hayes 3 sheep av 75 at \$2, 17 lambs av 70 at \$6.50; to Newton B. Co. 7 sheep av 110 at \$2.50; to Young 13 lambs av 67 at \$5.50.

Bishop, B. & H. sold Eschrich 24 yearlings av 80 at \$4, 5 do av 104 at \$4, 5 lambs av 70 at \$7; to Breitenbeck 42 do av 70 at \$7, 19 do av 50 at \$5; to Fitzpatrick Bros. 7 do av 75 at \$7, 49 do av 67 at \$7, 19 do av 90 at \$5.25; to Mich. B. Co. 9 yearlings av 140 at \$4.25, 14 do av 145 at \$4, 5 lambs av 80 at \$7.50; to Young 13 yearlings av 105 at \$5, 34 do av 75 at \$5.25; to Mich. B. Co. 47 lambs av 68 at \$7.25; to Newton B. Co. 9 sheep av 70 at \$3, 70 lambs av 60 at \$4; to Sullivan P. Co. 8 yearlings av 130 at \$5; to Fitzpatrick Bros. 6 sheep av 170 at \$3.50, 10 yearlings av 80 at \$5.25, 61 lambs av 67 at \$6.75, 17 do av 55 at \$6, 49 mixed av 75 at \$4.50, 49 sheep av 70 at \$3.25; to Harland 43 lambs av 65 at \$6.50; to Breitenbeck 51 sheep av 75 at \$3.25; to Fitzpatrick Bros. 12 lambs av 63 at \$4; to Thompson Bros. 22 sheep av 70 at \$2.50, 6 do av 125 at \$3.50, 5 lambs a 63 at \$6; to Sullivan P. Co. 17 do av 65 at \$5.75.

Roe Com. Co. sold Newton B. Co. 66 lambs av 65 at \$6.50, 18 sheep av 75 at \$3.50; to Young 22 lambs av 67 at \$6.50.

Haley & M. sold Mich. B. Co. 34 sheep av 100 at \$3.50; to Young 31 lambs av 70 at \$7, 6 do av 60 at \$6; to Mich. B. Co. 76 do av 67 at \$7; to Sullivan P. Co. 10 sheep av 108 at \$3.50, 130 lambs av 68 at \$7; to Barlage 20 do av 55 at \$5, 96 do av 68 at \$7.25.

Halstead sold Thompson Bros. 30 lambs av 58 at \$6, 1 sheep weighing 140 at \$3.

Barnard sold same 39 lambs av 67 at \$7.

Sharp sold Mich. B. Co. 73 lambs av 58 at \$7.

Boyle sold Sullivan P. Co. 14 lambs av 75 at \$5, 12 sheep av 90 at \$3.35.

Barnard sold same 21 sheep av 110 at \$3.50, 39 lambs av 68 at \$7.

Torrey sold Newton B. Co. 10 lambs av 62 at \$6.

Hogs.

Receipts, 2,567. Market steady with Wednesday, 5@10c higher than last Thursday.

Range of prices: Light to good butchers, \$6.85; pigs, \$6.65@6.70; light yorkers, \$6.85; roughs, \$6.80@6.85.

Spicer & R. sold Parker, W. & Co. 385 av 190 at \$6.85, 150 av 160 at \$6.80.

Haley & M. sold same 215 av 190 at \$6.85, 140 av 160 at \$6.80.

Roe Com. Co. sold Sullivan P. Co. 230 av 190 at \$6.85, 78 av 180 at \$6.80, 63 av 165 at \$6.65.

Bishop, B. & H. sold Hammond, S. & Co. 850 av 175 at \$6.85, 250 av 160 at \$6.80, 125 av 150 at \$6.75.

Friday's Market.

July 14, 1911.

Cattle.

Receipts this week, 890; last week, 820. Market dull at Thursday's prices.

We quote: Best steers and heifers, \$5.25@5.75; steers and heifers, 1,000 to 1,200, \$4.50@5.25; do. 800 to 1,000, \$4.25@5; grass steers and heifers that are fat, 800 to 1,000, \$4.25@5; do. 500 to 700, \$3.25@4; choice fat cows, \$4@4.25; good fat cows, \$3.50@3.75; common cows, \$3@3.25; canners, \$1.75@2.50; choice heavy bulls, \$3.75; fair to good bologna bulls, \$3.50@3.75; stock bulls, \$3@3.50; choice feeding steers, 800 to 1,000, \$4.25@4.75; fair feeding steers, 800 to 1,000, \$3.75@4.25; choice stockers, 500 to 700, \$4@4.25; fair stockers 500 to 700, \$3.50@3.75; stock heifers, \$3@3.50; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.5.

Veal Calves.

Receipts this week, 900; last week, 817. Market steady at Thursday's prices. Best, \$9@9.25; others, \$5@8.50. Milch cows and springers steady.

Sheep and Lambs.

Receipts this week, 1,091; last week, 1,009. Market steady at Thursday's prices. Best lambs, \$7.25@7.50; fair to good lambs, \$6@6.50; light to common lambs, \$4@5; yearlings, \$4.50@5; fair to good sheep, \$3.25@3.50; culls and common, \$2@2.50.

Hogs.

Receipts this week, 2,568; last week, 2,042. Market 5@10c lower than on Thursday. Range of prices: Light to good butchers, \$6.70@6.75; pigs, \$6.60; light yorkers, \$6.70@6.75; heavy, \$6.70@6.75.

A remarkable situation in regard to beef cattle exists in the United States. "Ohio, Pennsylvania and Kentucky have marketed their fat cattle and eastern points are not getting enough good cattle to supply the local needs," said M. F. Horine, statistician of the Union Stock Yard & Transit Company. "The character of receipts at Missouri river points shows the western supply has been cleaned up, which leaves Chicago about the only place on the market map where buyers can get adequate selection. That is likely to be the case for a long time to come. The present situation had its origin in the drought conditions of last summer, which forced all the regions west and southwest of the Missouri river to prematurely market young and growing stock, which was largely absorbed by Illinois and surrounding states. Then followed a magnificent corn crop and a splendid winter feeding season, resulting in abundance of fat cattle. The supply is lasting much longer in the territory directly tributary to Chicago than either east or west, simply because conditions for a year past have favored an abundance of good cattle in this territory, and will make Chicago from now on until the

next crop is fed, the chief and almost the only supply point for fat cattle. Domestic demand for beef is increasing, and there will be a strong and constant demand for beef of good quality. On the other hand, the supply of stockers and feeders in the country is short, and only short grass and scant water is sending them to market now. Adequate rains during the remainder of the season and another good corn crop will reveal the shortage of growing cattle in the country more sharply than at any time for 20 years, and prices for both young and fat cattle must almost certainly advance materially in the near future."

Ohio, Indiana and Illinois stockmen have been the largest buyers of stocker and feeder cattle on the recent declines in prices in the Chicago market. Farmers in other sections have been disposed to wait for their pastures to become restored, following the recent rains.

GENERAL REVIEW OF CROP CONDITIONS.

The month of June was decidedly unfavorable for growing crops in most parts of the United States. The aggregate condition of all crops on July 1, was 10.7 per cent below the average condition, whereas on June 1, conditions were only 2.8 per cent under average.

A comparison of the condition of various crops on July 1, with their average growing condition on July of recent years (past ten years for most crops) is shown as follows (100 representing average conditions and not normal).

Cotton, 110.2; lemons, 102.2; oranges, 100.5.

Rice, 99.0; beans (dry), 98.1; apples, 97.6; pears, 96.3; grapes, 96.1; peanuts, 96.0; raspberries, 94.9; corn, 94.6; cantaloupes, 94.4; winter wheat, 94.3; sugar cane 94.1; rye, 93.6; lima beans, 92.3; flax, 92.1; watermelons, 91.6; tomatoes, 90.9; alfalfa, 90.8; all wheat, 89.6.

Onions, 88.9; sweet potatoes, 88.3; sorghum, 88.0; blackberries, 87.9; hemp, 86.2; cabbage, 85.0; tobacco, 84.4; potatoes, 84.1; spring wheat, 84.1; broom corn, 82.2; barley, 82.0.

Oats, 79.7; timothy, 76.1; pasture, 75.9; peaches, 75.6; hay, all kinds, 74.7; kafir corn, 74.6; clover hay, 72.2; millet, 69.1.

The above figures relate only to relative growing conditions, not taking into account changes in acreage.

Taking into account both acreage and condition, indications are that the wheat crop will be 1.4 per cent larger than the average production of the past five years, corn 4.9 per cent larger, oats 12.3 per cent less, barley, 11.6 per cent less, potatoes 10.8 per cent less, tobacco 22.7 per cent less, flax 10.5 per cent more, rice 5.8 per cent more than the average production of the past five years.

The average condition of all crops in the aggregate, by states, on June 1, was approximately as follows, 100 indicating the average (not normal) for recent years on June 1.

Maine, 95.8; New Hampshire, 94.8; Vermont, 93.2; Massachusetts, 87.8; Rhode Island, 88.2; Connecticut, 84.0; New York, 91.4; New Jersey, 88.9; Pennsylvania, 90.7. Average for above divisions 91.0.

Delaware, 89.7; Maryland, 88.9; Virginia, 91.3; West Virginia, 85.0; North Carolina, 100.3; South Carolina, 100.0; Georgia, 105.2; Florida, 94.3. Average for above division, 99.1.

Ohio, 94.3; Indiana, 81.8; Illinois, 92.8; Michigan, 100.9; Wisconsin, 100.9. Average for above division, 92.6.

Minnesota, 88.5; Iowa, 94.9; Missouri, 88.5; North Dakota, 100.5; South Dakota, 56.3; Nebraska, 77.4; Kansas, 71.3; average for above division, 82.3.

Kentucky, 94.7; Tennessee, 97.5; Alabama, 107.5; Mississippi, 104.7; Louisiana, 98.6; Texas, 86.0; Oklahoma, 61.4; Arkansas, 99.5. Average for above division, 90.1.

Montana, 103.6; Wyoming, 97.9; Colorado, 85.6; New Mexico, 106.1; Arizona, 103.7; Utah, 97.2; Nevada, 102.7; Idaho, 106.6; Washington, 102.5; Oregon, 105.1; California, 101.7. Average for above division, 101.3 per cent.

The average weight of wool per fleece this year is 6.8 pounds, compared with 6.7 pounds last year and 6.5 pounds the average for the past ten years.

CROP AND MARKET NOTES.

Sanilac Co., July 4.—July has so far been dry and exceedingly hot. Crops need rain badly. Wheat about all in shock and people all remark about the good crop. Oats are looking fine, with a heavy stand of show but some fields are already beginning to ripen and will be light in grain if no rain comes. Hay is a little better than half done. Old meadows were rather light. Beans are growing very well and there is a large acreage. Some farmers are just finishing the marketing of their last year's crop and, having patience and faith, they at last received the \$2 per bushel. Potato bugs are very bad, the warm weather in May brought them on very early. Flies are causing trouble in some places.

Mecosta Co., July 14.—July, as well as the latter part of June, has been quite dry, yet crops are doing exceptionally well. Corn is nearly all tasseled and oats ripening at a good height. Pasture is nearly gone and cows are not doing nearly so well as they did a short time ago. This has been a very hard summer on horses, owing to the extremely hot weather. Potatoes have the prospect of being a very good crop. Lots of berries of all kinds, as well as peaches, plums and pears. Apples are a short crop, some fall apples but no winter apples. Hay is selling for \$10 per ton; hogs, 6c per lb.; veal, 6c; butter, 16c; butter-fat, 22c; eggs, 13c per dozen.

Ohio.

Carroll Co., July 0.—The weather here is very dry and hot. Nearly all the wheat and rye is hauled to the barn or

stacked. Considerable hay cut, but the crop is light this year, also the wheat was a poor crop because the fly spoiled much of it. Rye is a fine crop. Buckwheat won't be worth much if we don't get rain soon. Also grass in pasture fields needs rain badly. Corn looks fairly good.

Hardin Co., July 12.—Continued warm weather the past month, with frequent showers. Corn doing well, the largest growth for years at this time of the year. Wheat a good crop, yielding from 16 to 30 bushels per acre, and of fine quality. The market opened at 80c per bushel for the new grain. Cattle and hogs not so active. Eggs, 14c; cream sells at 24c.

Wisconsin.

Ashland Co., July 5.—June was rather a dry month for hay and pastures, but July brought refreshing showers. Hay, which here generally begins about July 4, was ten days earlier than usual and a good many of the farmers have their crop secured. Hay was not what it appeared earlier in the season. All old meadows short with thin bottom. New seeding, where it caught good, was fine, but the catch last year was so poor that, as a whole, the crop is not over half what it would have been under normal conditions. New seeding is very good, standing six to eight inches high among the oats, etc. Oats are very heavy, well headed and lodging in many places and few pieces early sown are turning. Corn is doing nicely and should be a good crop as knee high 4th of July, as corn raisers in Michigan say, does not compare with us, as waist high goes here this year. Potatoes are looking fine, but the bugs are on the trail hard and it keeps one on the watch at all times to keep them down. All root crops are coming on nicely. Beets, carrots, etc., are covering the ground nicely. What wheat and rye there is raised here is good and is beginning to change color. Potatoes which were a drug in the market a month ago, are very scarce and enough cannot be bought to supply home demand at \$1 per bushel, and some advise outside buyers have even offered \$1.20. Butter, creamery, 30c; dairy, 24c; eggs, 22c. Farmers look for 1910 prices for their hay.

NEWTON'S HEAVE COUGH, DISTEMPER CURE AND INDICATION

The Standard Veterinary Remedy. 21 years sale. Send for booklet.



DEATH TO HEAVES

The first or second \$1.00 can cures Heaves. The third can is guaranteed to cure or money refunded. \$1.00 per can at dealers, or express prepaid.

THE NEWTON REMEDY CO., Toledo, Ohio

FARMS AND FARM LANDS FOR SALE OR EXCHANGE

NEW YORK GREAT FARM BARGAINS near Ithaca and Cornell university; large list. Send for free catalog. KEEBER & BARBER, Ithaca, N. Y.

OUR CO-OPERATIVE LIST quotes owner's price for select FARMS all over Southern Michigan. The Ypsilanti Agency Co., Inc., Ypsilanti, Mich.

Dairy Farm For Sale—112 a. or would divide. 1/2 mile from village with 3 railroads. Established milk route. Good bldgs. Running stream. \$5000, 1/2 down. ELLA M. ROGERS, Copemish, Mich.

Mich. Lands—Choice Farm, Stock & Fruit Lands in Gladwin and Clare Counties. We have 20,000 acres of fine unimproved lands, also some improved farms. Write us for maps and folders. A. J. STEVENS & CO., Gladwin, Michigan.

Improved Pine Co., Minn. 120-Acre Farm

For Sale by owner. One-third cleared, 4 miles county seat, thickly settled neighborhood, 50 miles north St. Paul. N. P. R. R. Good dairy proposition. Price \$2400, 1/2 cash, balance 5 years' time, 6 per cent interest. REED CONNER, R. 3, Pine City, Minn.

FOR SALE—OLD COLONIAL ESTATE

Consisting of 570 acres, 250 cleared, rest in wood, 2 1/2 miles from R. R. station, 12 miles from Washington, D. C., 1 mile from public school. Historical frame dwelling with 11 rooms, barn and other out-buildings. Price \$30 per acre. For further particulars apply C. W. BEATTIE, Alexandria, Va., Route 3.

WHY PAY RENT

when you can buy the Best Land in Michigan at from \$6 to \$10 an acre near Saginaw and Bay City. Write for map and particulars. Clear title and easy terms. Stafford Bros., (owners) 15 Merrill Bldg., Saginaw, W. S. Michigan.

FREE

Literature will be sent to any one interested in the wonderful Sacramento Valley, the richest valley in the world. Unlimited opportunities. Thousands of acres available at right prices. The place for the man wanting a home in the finest climate on earth. No lands for sale; organized to give reliable information. Sacramento Valley Development Association, SACRAMENTO, California

236 Acres \$3,700
800 Apple Trees.

Tools and Machinery Included. This is a splendid fruit and dairy farm. Owner received \$1000 last season for apples alone, large quantity machine worked fields, cuts 40 tons hay. 186 acres in wood and timber, if sold would pay for farm. Pasture for 25 cows, 10-room house, 40x60 barn and other out-buildings, mile to lake, and 2 miles to two villages, near school, short distance to railroad station, fine locality, mail delivered. Owner is a widow and must sell at once. If taken now will include mowing machine, harrow and tools for only \$3.70, part cash, easy terms. For details of this and picture of beautiful residence, see page 95 Strout's Catalogue No. 24, biggest and best farm catalogue ever issued, full details regarding railroads, climates, markets, schools, crops raised, etc., 15 states. Copy free. Station 101. E. A. Strout, Union Bank Bldg., Pittsburg, Pa.



Woman and Her Needs

At Home and Elsewhere



"Make Learning Easy" Has Been Overdone.

"There is no royal road to learning," quoted the teachers of our childhood. "Make learning pleasant for the children," chant our children's teachers, the kindergartens leading the paean. The result is that the boards of education in many cities have been forced to instruct teachers to pass pupils on general work, for the average child can not pass an examination. Parents have never taken very kindly to the new method of making work play, and now teachers themselves are beginning to see that it does not produce exactly the results desired. In our day we were told to study because it was the right thing to do, because it was the only way to acquire knowledge, and because it was a duty we owed to ourselves, to our parents and to the state. The child of today is jollied along, he is offered sugar coated knowledge in the shape of stories and talks which must be made interesting if he is to pay any attention to them. It is never suggested to him that he must get down and dig, and commit to memory certain facts whether

he wants to or not. Even the dear old multiplication table which we had to learn forward and backward, upside down and inside out, has been metamorphosed to such an extent that we who learned our "two times" would never recognize it. And the children have been the losers. Ask a child of the present day how many sixes in eighteen and he is as likely as not to answer "two." But if he had learned his tables as we did, not because the teacher made it play but because it was the right thing to do, he could have given the right answer. The old method may not have been fun for the children, but life is not exactly a playground, and it is a good thing for children to learn that as they go along. Some time our boys and girls will be obliged to do unpleasant things, and it will be a great deal easier for them to learn that fact in school days than to slide through school without any effort, and with little real knowledge when they get through, and then have to buckle down to hard work.

DEBORAH.

Summer Laundry Problems—By Mary Mason Wright.

Where there are a number of girls in a family, and many lingerie dresses are worn, the laundering of them becomes quite a problem as well as a task.

The first thing that should be attended to before putting the garments in the wash is the removal of all stains. Boiling water is the best thing to remove fruit stains from all white goods. Pour through the stains from a little distance until they disappear. Hot water will also usually remove coffee and tea stains, but if not, try rubbing the spots with the yolk of an egg to which has been added 20 drops of glycerine and rinse off with warm water. Alcohol is excellent for removing mud stains from wash goods. Grass stains which children are so apt to get on their clothes in summer may be removed by saturating the spots with kerosene oil; if this does not prove effective, try soaking the spots in strong cream-of-tartar water, or dip into cold water and then into dry cream-of-tartar and let remain on a few minutes before washing it off. Ink stains can be removed with entire success by melting some paraffin and adding to it a little cream-of-tartar, pour this over the ink spot and let it remain on for some time, several days is best, then remove by pouring boiling water through the stain. For iron rust or mildew there is nothing better than to cover the spots with lemon and salt and place out in the strong sun.

It is much more of a problem to remove stains from tinted or colored goods of any kind. The best thing for this purpose is Fuller's earth mixed into a paste with glycerine and applied to the stain; this will not harm the most delicate shades. Stains that are not deep-seated may be removed often by applying dry cornstarch or talcum powder to the spot and allowing to remain for a time before removing. When using gasoline to remove stains put a little salt in it and it will not leave a streak around the spot, as is so liable to do. Deep scorch stains may be removed by applying a paste of cornstarch and placing the goods out in a strong sun. A newspaper should be put over tinted or colored goods, only leaving the stained part exposed.

The best way to wash dainty embroidered and lace trimmed waists and other summer lingerie of a sheer nature is to put to soak over night in clear cold water in which a little borax has been placed, about a tablespoonful to a gallon of water; then boil in a granite boiler. This will save some rubbing which is so hard on dainty, sheer goods. Use some good

white soap or soap powder in the water, and let them boil briskly for about 30 minutes. After this boiling if there are any soiled spots which have not been removed, rub with good white soap and rub between the hands. Do not use washboard on such garments unless absolutely necessary. It is advisable to use two rinse waters, using a little bluing in the last water. Avoid getting too much stiffening in sheer, dainty waists and gowns. Use just enough to give them the appearance of new goods and make them iron nicely. Shake out gently before hanging on the line, as they are liable to tear if they become clotted together too much.

The pretty white linen tub dresses should be washed in much the same manner as above; be sure that linen is well rinsed before starching since soap left in the goods will soon give it a dingy, yellow shade which is anything but pretty. A great deal depends on how linen is ironed. About an hour before it is ironed dip it into boiling water and run through a wringer, and then wrap tightly up in a towel or sheet; then iron on the wrong side until perfectly dry and you will have a suit that will look like new. Linen should not be starched very much, just enough to give it a pretty gloss and to give it the appearance of new goods. Good hot-water starch is made by dissolving the starch in a little cold water, adding a fourth of a teaspoonful of borax to each tablespoonful of starch. Pour boiling water over this until it reaches the right consistency then add a teaspoonful of turpentine. Be sure your irons are perfectly clean, since white goods always show the least bit of soil.

Lace and embroidery should always be ironed on the wrong side in order to bring out the pattern.

Since a great deal of white silk is worn in summer it is well to know how to wash it properly. Never use hot water in washing white silk as heat will turn it yellow, and never rub soap on the silk, but use soap jelly in the water. A little borax used in the first water will help to remove the dirt. Rub in the hands but not on the washboard. Rinse in three or four waters for not a particle of soap must be left in the goods. Squeeze the water out, between the hands then roll away in a towel and iron with a moderately heated iron before it dries. If it should become dry before ironing dip it in luke warm water and roll up.

Extra care must be taken when washing tinted or patterned goods if one does not wish them to fade. Soak blue goods

of all kinds in water in which sugar of lead has been dissolved, using something like an ounce to a pail of water. All other colors should be soaked in water in which salt has been placed, using about a teacupful of salt to a pailful of water. Soak for a half hour, then hang on the line without wringing out. When dry wash as if they had not received this treatment. Never use hot water on tinted, patterned or any colored goods that are liable to fade, and never use strong soap, especially on delicate colored goods. Use some good neutral soap. Some dainty, flowered organdies and delicate tinted goods will not even stand this neutral soap, in such a case wash the garments in a water in which bran or rice has been boiled, and to which a teaspoonful of borax has been added to each gallon of the water; unless very much soiled this will remove the dirt, keeping the color at the same time. Use vinegar in the rinse water, a teacupful to a gallon of water. This not only helps to set the colors but also restores some colors to their pristine brilliance. We find it a good idea to use bluing in the rinse or starch for blue garments, and a little dye to match the background of the goods of other colors, such as pink dye for pink goods, green for green and so forth. Patterned goods with a white background should be slightly blued to keep the white the proper color. Never hang any colored goods out in a strong sun for the heat of the sun's rays will often fade colored goods when they have come through the wash all right, and many delicate colors will change color as soon as a hot iron is put over them, so use a moderately hot iron. Linen colored, buff and gray goods have a tendency to spot, streak and also to fade in the wash. To avoid this add a tablespoonful of black pepper to the first wash. If at all possible, use soft water in washing clothes. If this is not possible then soften the water with borax.

A CHANCE TO HELP THE HELPLESS.

"Where to find vacation spots for 250 children," this was the problem which confronted the Michigan Fresh Air Society in Detroit the Monday after the city schools closed. And as days go by the number swells. The extreme heat is telling on the children of the congested districts, and mothers, looking at pinched faces, are seeking help. A chance for life, it seems for some of the more delicate ones.

One refined German woman, the mother of five children, has for seven years supported her flock. The children now range in years from six to 13. The two oldest are boys and the three younger girls are far from strong. The mother is looking for help, and on account of the youth of the children the society is hoping some generous man or woman will offer to take the whole three children so that they may be kept together.

Another mother of five lost her two oldest last winter, just as they had become old enough to aid her in her struggle. All five children had pneumonia and the two oldest succumbed. She would like to get a vacation of four or six weeks for two who are left, a boy of 12 and a girl of nine. The remaining child is too young to be sent out.

These are only two of many cases which show the need of the work. It is being carried on for the poor and weak, those who are unable to help themselves. If you send for a child, do not expect a beauty "with blue eyes and curly hair," as one woman requested. The children are for the most part puny and unattractive. But for that very reason they are all the more in need of help.

Address the Michigan Fresh Air Society, 406 Washington Arcade, Detroit, Mich. In writing please mention Michigan Farmer.

The following children have been sent

out: Lillie and Freddie Hemple to Mrs. P. M. Broesamle, of Chelsea; Harty and Lottie Fearle, to Mrs. T. D. Frost, Clarks-ville, Mich. A party of 26 children were taken to Manton, Mich., during the week. Places nearer to Detroit are preferred, as it is better to keep the boys and girls nearer home.

THE STRIKE OF THE FARM-WIFE.

BY MRS. FRED NISEWANGER.

She has not struck collectively, nor even individually, in any great numbers, but the sentiment is growing. The cases that already are, example the trend of the times and write the ultimate doom of the unmarried hired man.

Years ago, in our childhood perhaps, hired men were neighbor boys, as clean and well-bred as ourselves; but today, because most country boys that stay in the country are either farming for themselves or are needed at home, our hired men are generally one of three classes. Town boys who want a little spending money, are often of questionable habits and manners and are axiomatic in their certainty to leave one's husband in the midst of harvesting or such work, are the first-class. Ignorant, unclean foreigners that, for the sake of bettering the world, one might be willing to train to civilized customs if the long process of the learning were not such a menace to her own little children's education, form the second. Then there are just tramps, that happen along in season of distress and are set to work because help is so much needed. Always a doubtful quantity, they usually prove an undesirable addition to any home.

Recently, the woman's page of a farm paper was devoted to suggestions for making the modern hired man a more acceptable table companion. One farm-wife protected her tablecloth at his place by the use of paper napkins, another flung table etiquette at the hired man over the shoulders of her children, trusting some of it to hit the mark and stick; another appealed to hers, personally, to aid her in setting a good example for the children, and a fourth, troubled with untidy men, furnished everything necessary to the making of an acceptable toilet, told the men they must make use of the conveniences and then, if one approached the table partly clean or combed, he was sent back to complete the job.

Some, possibly all, of the methods might work some of the time; but certainly, there are times when none of them would work, and always they must be annoying and humiliating.

The country housewife has as good a right as any other to the privacy of her home for herself and family, and should have a particular right to exclude anyone that is in any way a menace to the proper training of young people. It is the home lessons and impressions that the children remember the longest and that will make them appear easy and natural or awkward and self-conscious in well-bred company later.

If there is no extra house on the farm and outside help is needed for the farm work, build the house and fill it with a married hired man and his family. There are plenty such to be had, usually young married people, if your need is made known. We always have more applications than can be filled. The cost in wages is a little more but not much, counting board, but the profit in comfort, convenience, and dependence is almost beyond measure.

DO NOT SUGGEST POVERTY.

One thing I would like to impress firmly on the minds of farmers and their wives is, "Don't preach poverty to your children!"

I can remember how my own childhood was clouded over by that feeling—that we were "poor." I really thought we were poor, as I heard so frequently the remark from father or mother, "Too poor

this year to afford it." "Lost a cow last week and it makes me feel pretty poor." Yet, as I look back upon the farm life of that period, from the perspective of some years of life in a city, with its many perplexing problems, I realize that we were not poor, but prosperous, even wealthy, comparatively speaking. We lived on our own farm, had a big, roomy house and many outbuildings, good, swift horses carriages, and plenty of stock.

We had real hens that laid real eggs, we kept real cows that gave real milk, and the cold storage substitutes that are now sometimes offered to us as the real thing, were unheard of.

We lived within a few hours' journey by rail, of the largest university in the middle west, yet we children were taught that its opportunities were wholly beyond the reach of farmers' sons and daughters, and our thirst for a university education was ungratified. Teach your children that nothing is too good for the farmer's son and daughter—that every opportunity for education and culture is possible and within their reach.

Improved machinery in-doors and out, telephones, daily mail service, have all helped greatly to put the farmer and his family on "Easy Street," and therefore, any mention or even suggestion of the depressing word "poverty" should be relegated to the literary scrap-heap.—L. W. S., Toledo, Ohio.

THE LETTER BOX.

A Mother's Influence.

Editor Household Department:—I was much interested in the article that appeared in a recent issue of the Michigan Farmer, on exacting obedience from children. There is many a sad failure because the mother simply makes threats and fails to keep her word, or tries to govern by deceiving the little ones—and yet, how many mothers foolishly—yes, wickedly, deceive their children to enforce obedience.

I once knew a bright little fellow of three summers who was pitifully afraid in the dark. One evening when I was present, for some trifling misdemeanor he was put to bed and the lamp taken out of the room. His little heart was filled with fear, and sob after sob came to our ears, until the mother finally said, "Clark, if you do not keep still and go to sleep, the black man will get you." Bravely the dear child tried to obey, but faintly I heard the smothered sobs under the bed clothes, until he fell asleep from sheer exhaustion.

O, how I longed to fold him in my arms and tell him of the kind Father who watched over him in the dark night, as well as in the day.

A little incident was once told by a lady who had been walking on the street with a friend. They met a lady accompanied by a little child just old enough to toddle along. Just as they were passing, the little one took a notion to pull off his cap and throw it down on the street, resisting all the attempts of his mother to put it on his head.

Finally she said, "Put it on, put it on, or the Jack will get you." The little one obeyed at once, seemingly having heard of this "Jack" before.

After they had passed along the lady gave vent to her indignation that anyone should govern a child by such means, when, to her surprise, her friend remarked: "Oh, you have to tell them such things sometimes, to make them mind. I tell Willie the rag-man will get him."

What an influence surrounds such children. In time they will come to know they have been deceived, and, as they grow older they will not believe what is told them by their mother in regard to forbidden paths or pleasures; and, as a consequence, many a mother's heart has been made to ache—alas, when it was too late to remedy the evil.

But, thank God, all children are not brought up under such influence. We have many noble mothers who would not stoop so low as to deceive a child to enforce obedience.

I remember several years ago a notice appeared in one of our farm papers, of the death of the mother of the editor. In the concluding lines of the obituary, this beautiful tribute was paid to her memory: "Four of her sons passed from the rugged home farm in Maine, through Bowdoin College. In their efforts for education and usefulness, and in general their character and success, they ascribe more to their mother than to any other human being."

I would rather be worthy of such a tribute from my children than have them erect the costliest monument to mark my resting-place.—J. M. W.

SHORT CUTS TO HOUSEKEEPING.

Butter may be kept hard in warm weather by the very simple process of turning an earthen vessel, crock or other like vessel, over the dish which holds it. The butter will be kept cool by this means. It will be well to wrap the vessel with a wet cloth. A little cold water poured into the dish will be effectual. The heat will be thus absorbed and the butter will harden.—F. M. B.

Waists and blouses made of white crepe are not only popular at the present time but they offer a decided advantage when it comes to laundering, since they require neither starching nor ironing. A seersucker possesses the same features and is useful for children's play dresses.—Mrs. E.

A very simple way to keep butter and milk when you have no ice or cellar is to sink a jar in the earth. In a shady place on the north make an excavation large enough to place a six-gallon jar, allowing the jar to project about four inches above the ground. Pack the earth around the jar firmly. Turn a box over the jar.—M. A. P.

For a hot, sunny window, take an old sheet, fold in half, then in quarters, dip in cold water, and wring slightly. Push window up, and hang wet sheet in same by means of thumb tacks, at opposite corners on sash, leaving a few inches space at bottom of opening. The slightest breeze will be found delightfully cool and refreshing and especially comforting to a sick person.—Mrs. J. J. O'C.

Set your poison fly paper outside the door where the flies collect the thickest. Small hanging shelves, large enough to hold a saucer, made with a bit of board six inches square, some string and a nail driven in the wall, may be placed where needed and a great difference will soon be noticed in the number of flies.—T.

In canning fruit after cooling, dip the tops in melted paraffin, covering the shoulder where cover and rubber meet. Set cans away with the satisfaction of knowing the fruit is going to keep.—E. E. R.

In packing the sandwiches for a picnic, if a damp cloth is placed in the bottom of the basket and another over the top, they will keep fresh and moist for hours.—E. L.

To clean stained granite boil it in a strong solution of soap and soda.—E. L.

Green tomatoes make a fine dish by slicing them, rolling in flour, seasoning well and frying in hot butter until they are crisp and brown.—Z. J. D.

Plums and pears put together make excellent preserves. Elderberries mixed with grapes or apples or rhubarb or plums make delicious jelly and jam.—Z. I. D.

If you want that row of onion seed in the garden to germinate quickly, have a tea kettle of boiling water to pour on the row after covering with earth.—Mrs. W. R. R.

Being pressed for time last fall I canned some peaches without paring them, washing carefully, cutting in halves, removing pits and bruised places and proceeding as usual. They have so much finer flavor, the juice is so much clearer and pinker, I am going to do them all that way hereafter. The skin may easily be slipped off, if desired, before serving.—Mrs. D. L. M.

A small piece of tin or pasteboard laid over the grate in the refrigerator to set cups or other small dishes on will prevent their tipping over.—E. L.

If the ice which goes into the refrigerator is not clean a piece of closely woven wire net or window screen laid over the tops of the drip pipe will prevent clogging.—E. L.

Take the amount of rice you prefer and let boil briskly until soft, drain off, add milk enough to keep it from sticking to bottom while cooking a little longer. Add butter the size of a walnut, sugar and salt to taste. When mixed thoroughly take off stove and sprinkle cinnamon on top. This is good, baked or unbaked.—M. N. C.

(If you butter the tin before putting rice to boil it greatly lessens the danger of sticking and burning).

Corn should never be boiled more than ten minutes. Put it on in boiling water, add a little salt and boil for ten minutes, roll in a table napkin and serve immediately.—Mrs. A. D.

A CHEAP LIQUID FERTILIZER.

BY GERTRUDE K. LAMBERT.

Last season was extremely dry, and the waste water from the milk room, milky water from the cream separator and from washing milky dishes, was used for watering plants. A bed of lettuce, so treated, was the wonder of the neighborhood for luxuriant growth and tenderness, lasting for table use, the entire season, without becoming tough. A bed of asters and pansies, watered every evening with the pail of milky water from flushing the cream separator after using, soon attracted the attention of the passers-by, for its rank growth, and the abundance and brilliance of its bloom. Hereafter, the milky water from milk-room and kitchen, will be considered of more value to the garden, for forcing especial beds of plants, than for food; the amount of milk which it contains, being too much diluted for calf and pig feeding. In using the water on plants, it is best to turn it slowly from a pail; as there is a chance that it may clog the nozzle of a sprinkler. Also, stir the soil frequently, after using the milky water for watering, as it soon forms a crust upon the surface, which must be broken and stirred.

SACCHARIN IN FOOD MEANS ADULTERATION.

At the request of the Secretary of Agriculture, the Referee Board of Consulting Scientific Experts has conducted an investigation as to the effect on health of the use of saccharin. The investigation has been concluded, and the Referee Board reports that the continued use of saccharin for a long time in quantities over three-tenths of a gram per day is liable to impair digestion; and that the addition of saccharin as a substitute for cane sugar or other forms of sugar reduces the food value of the sweetened product and hence lowers its quality.

Editor Household Department:—Will someone please give me a recipe for using endive?—An Old Subscriber's Wife.

Endive is used as a salad, like lettuce. It is more palatable if served with oil and vinegar than with a boiled dressing.

MICHIGAN FARMER PATTERNS.

These patterns may be obtained from the Michigan Farmer office at the price named. Be sure to give pattern number and size.



No. 4610—Ladies' Tucked Shirt Waist. Cut in sizes 32 to 42 inches bust measure. For 36 bust it requires 4 yards of 27-inch material. Price, 10 cents.

No. 3760—Boys' Russian Suit. Cut in sizes 2, 4 and 6 years. For 4 years it requires 3 yards 27 inches wide. Price, 10 cents.

No. 5274—Ladies' Long Kimono. Cut in sizes 32, 36, 40 and 44 inches, bust measure. Size 36 requires 6½ yards, 36 inches wide. Price, 10 cents.

No. 5277—Ladies' Seven-Gored Skirt. Cut in sizes 22 to 32 inches waist measure. Size 24 measures 3½ yards around the lower edge and needs 3¾ yards 44-inches wide. Price, 10 cents.

No. 5167—Children's Yoke Dress. Cut in sizes 1, 3 and 5 years. The three-year size requires 2 yards of 36-inch material, with ¼ yard of 18-inch over-all. Price, 10 cents.

A SPOON SHAKER

Straight From Coffeedom.

Coffee can marshal a good squadron of enemies and some very hard ones to overcome. A lady in Florida writes:

"I have always been very fond of good coffee, and for years drank it at least three times a day. At last, however, I found that it was injuring me.

"I became bilious, subject to frequent and violent headaches, and so very nervous, that I could not lift a spoon to my mouth without spilling a part of its contents.

"My heart got 'rickety' and beat so fast and so hard that I could scarcely breathe, while my skin got thick and dingy, with yellow blotches on my face, caused by the condition of my liver and blood.

"I made up my mind that all these afflictions came from the coffee, and I determined to experiment and see.

"So I quit coffee and got a package of Postum which furnished my hot morning beverage. After a little time I was rewarded by a complete restoration of my health in every respect.

"I do not suffer from biliousness any more, my headaches have disappeared, my nerves are as steady as could be desired, my heart beats regularly and my complexion has cleared up beautifully—the blotches have been wiped out and it is such a pleasure to be well again." Name given by Postum Co., Battle Creek, Mich.

Read the little book, "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

SHIRTWAISTS OF QUALITY

certainly demand the use of the world famous, ever popular

Pacific percales

(Fifty Years the Standard!)

These recognized highest quality percales made, insure longestwearing qualities and richest effects. The designs are such as appeal to women of the most discriminating taste in dress. Yet the price (10c and up a yard) means lowest cost for correct apparel. Ask your dealer for "Pacific Percales" and see that each piece bears this Pacific Mills trade mark, the guarantee of greatest value and newest conceptions.

If your dealer doesn't carry Pacific Percales, write us for free samples and list of retailers who will supply you.

PACIFIC MILLS - BOSTON, MASS.



Be Sure You Get

JAP ROSE

"The Original Transparent Soap"

Delightful for the Toilet and Bath. Instantly cleanses the skin of all greasy impurities. Refreshing and pleasing to the most delicate skin. Scented with the perfume of roses. Lathers freely in all kinds of water. Sold by dealers everywhere.

REFUSE IMITATIONS

Look for the Jap Girl on every package.

A LARGE CAKE FOR 10c **KIRK** Established 1889

DAISY FLY KILLER



placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Can't spill or tip over, will not soil or injure anything. Guaranteed effective. Of all dealers or sent prepaid for 20c. HAROLD SOMERS 150 De Kalb Ave. Brooklyn, N. Y.

Don't Fail to mention the Michigan Farmer when you are writing to advertisers.

HORTICULTURE

COVER CROPS IN THE ORCHARD.

The orchard cover-crop is used not half enough, and is but little appreciated. Too often, the orchards are cultivated until about the first of August, and then left until the following year. This is not the best orchard practice.

In the northern states, the cover-crop period lasts, usually from August first, to April first, and during this time a great amount of plant food is lost to the soil, especially the costly nitrogen, unless some means is taken to conserve it. A pound of fertility saved is far better than a pound bought; then it is very poor economy to let the orchard soil lie idle through the fall and winter. Soon after the summer cultivating stops, an abundant crop of weeds springs up and revels in its freedom until the frost cuts it off. During this time it has absorbed a great amount of nitrogen, phosphoric acid and potash. True, this fertility will be returned to the soil, when the weeds are plowed under, but what a progeny of weed seeds is left to make cultivation doubly hard and expensive the coming season. Further, weeds grow rank in any wet, rich hollow, but rather neglect the higher, poorer spots, so they cannot be depended upon to grow evenly where needed. However, the crop of seeds condemns the weeds.

Unless there is a heavy mat of weeds or some other cover during rain, much damage is done by erosion where the soil is rolling. The heaving caused by frost helps this washing of the soil. Often the rich top soil is carried bodily to some other place, and the farmer, looking over his orchard in the spring, finds numerous ruts and little gullies that were not there in the fall. Plant food is thus washed away, and worse; all over the orchard fertility has been washed down through the soil beyond the reach of ordinary plant roots.

Now, a good cover crop would remedy these troubles. Weeds are kept from getting a foothold, so the land is cleaner the next year. The leaching of plant food is stopped. The soil is held by the roots and by the tops of the cover-crop so it does not wash as badly. The cover-crop blankets the roots, and may save them from winter injury. The growth of the cover-crop dries out the soil in late summer, hastening the ripening of the fruit and the maturing of the wood and buds before they are caught by the fall freezes.

But beside the advantages just named, the cover-crop has a large fertilizer value. There is a quick growth to turn under, and if this is done early in the spring, it quickly rots. If the orchard soil is lacking in nitrogen, clover, alfalfa or winter vetch may be used as the cover-crop, for these are legumes and have the power of taking up nitrogen from the air in the soil. This nitrogen becomes available then, as plant food when the turned-under crop has decayed. But if the soil is not in need of more nitrogen, rye, oats, buckwheat or rape is commonly used.

Cover crops are sometimes sown in the spring, but the practice is not recommended except where green manure is wanted or the growth of the trees needs to be checked, as it often does during an exceptional growing season. Clean cultivation is undoubtedly best for the orchard in ordinary seasons, up to August.

If the fruit grower uses cover crops judiciously, there is less need of his buying fertilizers, or using his valuable barn yard manure around his trees. Cover-crops should come to a more general appreciation and use.

Gratiot Co.

S. A. MARTIN.

THE WILSON FRUIT BILL.

Governor Dix, of New York state, has signed the Wilson fruit bill, Act 511 of the Public Acts of 1911, the text of which is herewith printed in part for the benefit of those readers who are interested in the legislation relating to the handling and selling of fruit:

No person or persons shall sell, offer or expose for sale, apples, pears or peaches as and for New York state grown apples, pears or peaches if they were not grown or produced within the state of New York; nor shall they brand or label the package or barrel containing such apples, pears or peaches as New York state apples, pears or peaches, if they were not grown or produced within the state of New York. Any person or persons packing or repacking or causing apples or pears to be packed or repacked to be sold upon the markets, shall pack or repack

or cause them to be packed or repacked in such a manner that each separate package or barrel shall be packed substantially uniform and without intent to deceive the purchaser.

Any person, persons or corporation buying from a grower apples or pears which are packed in packages or barrels, marked or labeled with the name of the grower, who causes such apples or pears to be repacked in the same packages or barrels or who uses the same packages or barrels for the packing of other fruit or apples or pears, shall erase from each package or barrel the name of the grower or packer first or originally placed thereon. But the facing of such package or barrel is not prohibited by this section.

The standard grade for apples which shall be shipped or delivered for shipment or which shall be sold or offered for sale shall be apples of one variety, which are well grown specimens, hand picked, of good color for the variety, of normal shape, practically free from insect and fungus injury, bruises and other defects except such as are necessarily caused in the operation of packing, or apples of one variety which are not more than 10 per cent below the foregoing specifications, are standard grade size A, if minimum size of apples is 2½ inches in transverse diameter; or are standard grade size B, if the minimum size of the apples is 2¼ inches in transverse diameter; or are standard grade size C, if the minimum size of the apples is 2 inches in transverse diameter.

No person, firm or association shall misbrand apples as to their standard grade or otherwise. Apples in packages shall be deemed to be misbranded within the meaning of this act if the package bears any statement, design or device indicating that the apples contained therein are standard grade "size A," "size B" or "size C," as the case may be, and the apples do not conform to the requirements prescribed by this act for apples of the particular grade.

It is not the purpose of this law to require every person to pack, mark and sell his fruit in the manner stated in the statute, but if he attempts to sell the fruit packed as New York fruit of a certain grade, then the statute applies and the packing and marking must be according to the specifications. While the crucial test of any law seeking to regulate commerce in any manner is experience under that law, it would seem that this statute will aid in extending the fruit business of the Empire state since it guarantees to the purchaser the quality of the fruit, and so defines the grades as to give recourse in case the purchase fails to conform to the terms thereof.

REPORTS ON THE APPLE SITUATION.

Virginia Crop Not Large.

Secretary Whately, of the Virginia State Horticultural Society, states that prospects for a crop of apples in Virginia are not as good as they appeared earlier in the season, due to a long continued drouth and to the failure of trees to properly set fruit. Last year a heavy crop was produced in that section which may account for the smaller crop promised for this fall. He estimates that the average for the whole state will amount to from 30 to 35 per cent of a full crop.

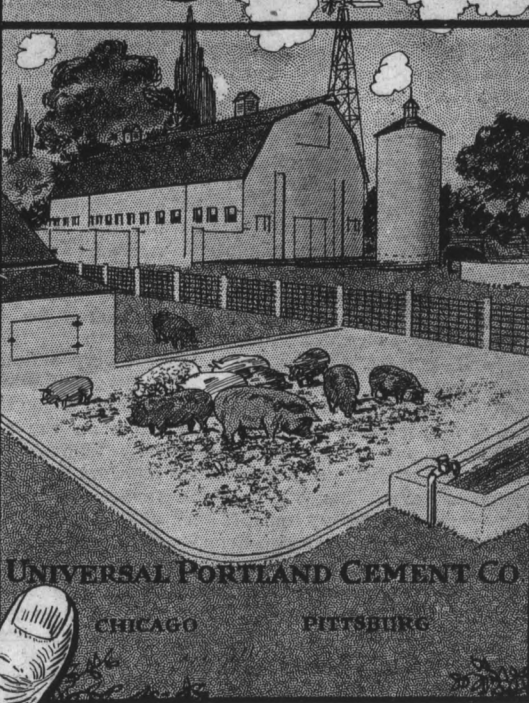
New York Fruit Report.

Following is the report of the secretary of the New York State Fruit Growers' Association regarding the condition of fruit in that commonwealth: Fall apples, 69 per cent; winter apples, 62; pears 62; peaches, 69; plums, 74; quinces, 74; grapes, 87. The acreage of cabbage is 78 per cent; potatoes, 87; beans, 94 per cent. The counties reporting the largest estimate of fall apples are Onondaga and Otsego with 100 per cent, while Erie comes next with 95 per cent; Monroe third with 83 per cent; then Winchester with 83 per cent; Wayne with 77 per cent; Cayuga, Oneida, Ontario, Schenectady and Tompkins with 75 per cent each; Orleans, Oswego and Seneca with 74 per cent each and Niagara with only 69 per cent.

Canadian Apple Crop.

A statement from the Canadian department of agriculture indicates that the crop of apples will be fair. Nova Scotia expects a full crop of fall and winter varieties. The counties on Lakes Ontario and Erie promise a fair to average yield, while those on Lake Huron and east as far as York county will not produce a half crop. In the St. Lawrence Valley and Quebec the tent caterpillar is defoliating the orchards and has caused serious damage. The early and fall apples in that section will be a medium crop but the winter yield promises to be very small. New Brunswick and North-eastern Quebec will produce a fair crop if conditions are favorable from now on. The outlook on the western coast is not bright, the crop being inferior to that of 1910, except in the interior valleys of British Columbia, where there is better hope for a satisfactory yield.

CONCRETE in the COUNTRY



UNIVERSAL PORTLAND CEMENT CO.
CHICAGO PITTSBURG

Write for This Book "Concrete in the Country"

A book of building hints of everyday use to the farmer. And it is **FREE**.

It contains over 100 pages of solid information, clear descriptions and pictures of a hundred different uses of cement on the farm.

Mailed **FREE** upon request.
Write now while you think of it.

Address the nearest office of the Company.

UNIVERSAL PORTLAND CEMENT COMPANY

CHICAGO
72 West Adams St.

PITTSBURG
Frick Building

MINNEAPOLIS
Security Bank Building

Annual Output 40,000,000 Sacks

Only While Present Stock Lasts



A GENUINE
GUARANTEED
GERMAN RAZOR

AND

PRESTO "All-in-One" STROP

Both **\$1.20** Post-paid.
For Only

THE RAZOR is Hollow Ground 5/8 inch blade, best razor steel; double shoulder, ebony handle, all ready for use. We imported them direct from Germany in large quantity just before raise in tariff. Dealers sell this razor for \$1.50 to \$2.00.

THE PRESTO STROP is made of finest horse hide leather, chemically treated with "All-in-one" solution, which cannot peel, wear or scrape off, but makes it possible for any man to strop a razor as well as a barber can. This strop has alone sold for \$1. Send your order at once to

The Michigan Farmer Detroit, Mich.



HOME AND YOUTH

THE FARMER BOY.

BY IVAN E. BAKER.

Through all the long bright summer day
Content he sings, and in his way
Finds joy. Through fields of wind-rowed
hay

He plods along
The thrush's song,
Sweet as the wild-wood rose, what joy
he knows!

He seeks the cool and sheltered nook
Where nothing, save the babbling brook,
Annoys him. There with rod and hook
He spends an hour,
The sweet wild flow'r
Near by, and, just above, the cooling of
a dowe.

Across the furrowed fields again
He toils, and through the rain
To sheltering elm. Then down the lane
He wanders lone.
The sun has shone
Low in the golden sky, and night is nigh.

THE SAVING OF CAESAR.

BY A. A. C.

His name had never been Caesar. In fact, at the time he had this rather striking cognomen given to him, very little was known of his past history. When Tom came home one day from school lugging in his arms a rather dirty, bedraggled, forlorn looking yellow dog with a sore leg, nobody received either him or the dog with open arms. When they were on the farm, Tom had had two dogs, but now that they were in town it was different.

"For goodness sake, Tom Barnes, where on earth did you get that ugly dirty yellow dog? Don't bring him in here," was the exclamation of Tom's mother.

"See here, boy, don't you know better than to come home lugging every vagabond tramp dog or cat you find? Do you expect we are going to run a Zoo here? Who's going to pay for his keep?" said his father.

But it was raining and Tom begged to be allowed to put the dog in the shed until his leg got so he could walk. A few days after this event in the Barnes family, Tom came down with scarlet fever. In his delirium one night, when the fever was at its height, he pleaded incessantly to be allowed to keep the dog and the matter was settled then and there—Caesar at last had found a home.

Caesar's past life had been none too happy—in fact, a hard life for even a dog. It is true that for the first six months or so he had had considerable attention, had indeed had many small, dog comforts, but now that time seemed very long ago. If Caesar thought of it at all it must have seemed a dream, or as if he had been some other dog then; for in his latter years (the time surely seemed like years) he had been a veritable hobo dog, picking up a living anywhere he could, with no settled spot which he could call home. He was sorry indeed that he had ever been foolish enough to follow a man away from the farm. People in towns and cities are always moving about, and when people are going to a distant place a common yellow dog is very apt to be considered more or less of a nuisance—an easy thing to forget when moving day comes. He had stayed around the deserted cottage for a few days, hoping someone would come to occupy it, but hunger finally drove him to tramp methods. To be perfectly fair to Caesar, it must be said that tramp life was far from being his choice. Gladly would he have settled down, like any other well-behaved dog, and become a respectable citizen with domestic tastes and habits. He had no special fondness for roaming—at least he had never, until he foolishly ran away, gone so far that he could not find his way back in good time for dinner. All through his short life he had scorned vagabond dogs, and had associated only with decent neighborhood canines. Now he was to become a tramp.

It was surely a cold, hard, unfeeling world in which he found himself. Even a dog must eat to live, but nobody seemed to remember that. In fact, there seemed to be grave doubts as to the necessity of Caesar living at all, but how can a dog help it. Driven at last to tramp methods, he presented himself at various back-doors and asked for something to eat and a place to sleep—asked just as plainly as any well-bred, cultured dog could ask. What he got in return was the door shut in his face, in one place, a kick at the next, and a flourish of the broom at him in the third. What was he to do? Frowns

and all sorts of rudeness he got in plenty—bad names of all sorts were hurled at him, but never a bone or a scrap of meat. Even plain bread and butter he would have welcomed, a thing he had never cared for when on the farm. As for being invited to come in, that was out of the question. At house after house he was told, in the plainest possible language, that he wasn't wanted. "Go away, doggie, we don't want you." He got tired of hearing it, and it is not to be wondered at that he began to develop a very undesirable dog disposition. As for his good name or his past reputation, he might as well have never had a reputation, for, good or bad, nobody had any use for him. He lived mainly on scraps gathered from garbage cans in back alleys and slept wherever he could. Some of the long days were enlivened by "scraps" with other dogs.

One day he whipped two other dogs, one far bigger than himself. It was in an alley, when no one else was around, and he had what he considered a fair chance. After that achievement one might have expected him to strut around, looking down on dogs in general for some days, but if he felt proud of it he never showed it in the least. His head was slightly swelled for several days, it is true, but not from pride.

Naturally the owners of other dogs resented his scraps with their more highly favored and handsomer dogs, but he became surprisingly clever in dodging stones and missiles of all sorts. His disposition became worse and worse. He lived to quarrel and fight. Since every boy's hand was against him, why should he love anybody. Fight he would, and fight he did, and he cared not who knew it. He did it in broad daylight. By night he barked and barked by way of expressing his resentment of the treatment accorded him. Nobody seemed to care whether his feelings were hurt or not. Why should he care whether people slept well or not? So he barked night after night, and there were low mutterings and dire threats heard in many a house.

Yet before he had been forced into this strenuous method of existence, when he was living comfortably as dogs should, and as he still desired to, his voice had been mild and gentle and melodious, and he had worn a look of sweet innocence and perfect trust that was beautiful to behold. He used to have, in those far-off days, a soft, cold, wet sort of nose, which he was accustomed to poke up at people—his way of inviting them to be friends with him and pat his head. It was his delight to lick the hand that presented him with a nice ham bone or a plate of chicken, or beef scraps with a bit of nice bread and gravy. He had a thankful disposition then. Now he was ready to lick anything that dared to touch him, boy, dog or man, so swiftly can a dog degenerate under harsh treatment. As for manners or conscience he had none—none to speak of, at least. He would steal from anywhere, and he was beginning to hate everybody. His appetite was prodigious but never satisfied. There was always the gnawing inside, the longing for something more and better than garbage cans afforded.

It was after one of his scraps with a dog that belonged to some boy—a dog with a fancy collar on—that his leg was wounded. He had come out second best in this unequal fight, because no common collarless dog can expect to be equal to licking another dog when there are three boys there to pelt the aforementioned yellow dog with brickbats. Not content with rescuing the aristocratic dog with the collar, and inflicting serious bodily wounds on Caesar—wounds which greatly marred his personal appearance, to say nothing of his pride—these boys, to their shame be it said, had filled an old tomato can with stones, tied it to his tail and left him in a vacant lot. It was the worst, the very worst plight, he had ever been in. What to do he knew not.

Very soon after the boys left a drizzling rain came on. Tom came also. It apparently just happened that Tom came around there on his way from school, though Tom's mother does not believe that anything just happens. It was a very pitiful whine that Caesar was giving vent to as Tom approached—a whine that said plainly and unmistakably, "Do, Somebody, please come quick and take this old weight off my tail and let me loose! I promise faithfully to be good if I am given a fair chance." How faithfully Caesar kept that promise remains to be seen.

For the first few days after Tom found him, Caesar had every attention a dog

could desire—a nice little bed of straw in a corner of the shed, basins of bread and milk at intervals and various other little material comforts. It was months since Caesar had tasted milk; he couldn't remember when, but he recognized it as soon as he saw it coming, and his poor sore tail began to wag, and his mouth watered at the sight and smell of the milk. Sundry toothsome scraps of meat such as ordinary dogs love, beefsteak that was underdone, or too fat for Tom, and rinds cut off the bacon in the kitchen, were added to his bill of fare. Every day Tom brought him fresh water in an old basin. The poor wounded leg had been washed and bandaged up with a soft clean old handkerchief, and Caesar's faith in mankind had begun to revive.

By the time Tom had reached the "peeling stage" in his scarlet fever experience, Caesar had greatly improved in appearance, though he had not yet ventured into society. He hardly knew himself. His wounds had healed. Hair had grown over the bare spots on his tail and hide. Apparently his disposition also had changed. At least he had ceased his howling at night and seemed less of a pessimist. But his reformation was far from complete. He was allowed to leave the shed and take such exercise as he could in the back yard where Tom's baby sister played, a permission he was not slow to avail himself of. To a vagabond dog accustomed to life in the open country, the shed, comfortable though it was, seemed almost like a prison. The back yard was somewhat better, but though he seemed to appreciate to the full the material comforts he was enjoying, he sadly missed the excitement of scraps with other dogs.

From the first he developed an unusual fondness for Baby Gertrude. He followed her up and down, allowed her to maul him around in a fashion he would have promptly resented from anyone else, and evidently constituted himself her especial guardian.

To Tom's father and mother he behaved civilly but never affectionately, and he was far from obeying promptly the few direct commands which they gave him. He had been so accustomed to hard knocks when he was told to do a thing, that he had come to believe it need not be done unless it was accompanied with a blow of some sort.

When at last he was allowed to venture into the street his old habits soon reasserted themselves. The very first day he got into a dispute with a passing dog, chased a hen, caused no end of excitement in a neighboring chicken yard, and barked so insolently at an automobile that the chauffeur stopped, got out to hurl stones at him, called him extremely undesirable names, and threatened to annihilate him then and there.

Life again was worth living for Caesar. Something interesting could happen still in dogland. What new forms of excitement he would have discovered that day nobody knows, for his unholy experiences were brought to an unexpected end for the time. Tommy happened along while the chauffeur was breathing out threat-enings and slaughter, lugged Caesar off home, shut him in the shed, and severely admonished him for his bad behavior. For a while he pretended to treat such admonitions with a cool indifference and a swagger that said plainly, "Who cares for what you say? Is a dog never to have a bit of fun?"

Caesar's one redeeming feature was his love for the baby who was just beginning to toddle around. Where she went he went, and while she was with him he rarely molested anything. Many a time she humiliated him before the world. She threw him down, hauled him around, and even sat on him in a way that many a self-respecting, high-spirited dog would never have tolerated. But to him whatever the baby did was right, and he never thought of resenting it. When she came in for her nap he took a little nap, too. When she had her cup of bread and milk he always got the remains.

It was while she was away visiting with her mother that Caesar's first actual crime was committed since his reformation. He had ventured out one fine morning after breakfast for a walk. Tom was away at school. In the course of his wanderings he encountered a cat belonging to two old ladies in the next block. The cat arched her back in true cat fashion, insolent defiance was in every step she took, and before he knew it they were in a life and death battle in which the cat came out worst, in fact, didn't come out at all, for she was killed. Two little girls happened along as witnesses

Please mention the Michigan Farmer when writing to advertisers.

PROPER SOIL ENRICHMENT.

More attention must be paid to the scientific enrichment of our soil. It will not do to take everything off and put nothing back. Our farmers are realizing the necessity of proper and adequate fertilization, of proper crop rotation and thoroughly tilling their fields. In foreign countries—where more attention has been given to soil enrichment than anywhere else—it has been demonstrated that the best results are obtained by thoroughly fertilizing all the land. This can only be accomplished by broadcasting the fertilizers on the land and then working it thoroughly into the soil at the time the land is prepared for the seed. The main difficulties have been to get a machine that would scatter the fertilizers evenly over the ground—no matter what kind of fertilizer was sown. The chief obstacle has always been the fertilizer. Some of it is pasty and sticky, other varieties are lumpy and some like powder. The fertilizer sower to be a success must be able to successfully handle all these various commercial fertilizers. The Buckeye Broadcast Fertilizer Sower, manufactured by The American Seeding-Machine Co., Incorporated, Springfield, Ohio, not only handles all these fertilizers, but it scatters it in an even sheet over the ground. This machine is sold under an iron-clad warranty to do all that the manufacturers claim for it, and it will do the work right. Send for a Buckeye Broadcast Fertilizer Sower catalogue to The American Seeding-Machine Co., Incorporated, and then go to your implement

Farmers!

Special Offer To introduce my Leaf-Guard Attachment for Cultivators to improve cultivation for beans, beets, potatoes, garden truck and similar crops, I offer ten days' free trial. They have approval of successful farmers and agricultural experts where introduced throughout U.S., and will be used by same. Supply this season limited.

Ask your implement dealer or write a postal for folder on plant culture "How to increase the yield per acre."

Geo. Goodchild, Box 129, Lansing, Mich.

THE U. S. GOVERNMENT WANTS GRADUATE VETERINARIANS

And pays big salaries. Graduates of Indiana Veterinary College are eligible for appointment in U. S. Bureau of Animal Industry and as U. S. Army Veterinarians, and are fully qualified for successful private practice. A recognized college—among best in America—teaching every branch of veterinary science. Catalogue, PROF. F. A. MUELLER, Sec. 812 E. Market St., Indianapolis, Ind.

SINCE 1795 FAVORITE
FOR INFLAMED AND WEAK EYES
DR. ISAAC THOMPSON'S EYE WATER
Gives almost instant relief and is easily applied. For bathing the eyes it is indispensable. Booklet free.
25c SOLD EVERYWHERE.
JOHN L. THOMPSON, SONS & CO., 161-5 River Street Troy, N. Y.

WANTED FOR U. S. ARMY—Able-bodied, unmarried men, between the ages of 18 and 35, citizens of United States, of good character and temperate habits, who can speak, read and write the English language. For information apply to Recruiting Officer, 212 Griswold St., Detroit, Mich.; Heavenrich Block, Saginaw, Mich.; Corner 1st & Saginaw Sts., Flint, Mich.; 110 East Main St., Jackson, Mich.

Let Me Start You in Business!
I will furnish the advertising matter and the plans. I want one sincere, earnest man in every town and township. Farmers, Mechanics, Builders. Small business man, anyone anxious to improve his condition. Address Commercial Democracy, Dept. D 30, Elyria, Ohio.

LEARN AUCTIONEERING At the Worlds Greatest School and Become Independent. Catalogue and complete information FREE. Write for it today. JONES NAT'L SCHOOL OF AUCTIONEERING, 2856 Washington Blvd., Chicago, Ill. Summer term opens July 31.

AGENTS Make Big Money making Magic Polishing Cloth. Directions for Manufacturing 25c. EUREKA SPECIALTY CO., 210 S. State St., Ann Arbor, Mich.

YOUNG MEN WANTED TO LEARN VETERINARY profession. Catalogue free. GRAND RAPIDS VETERINARY COLLEGE, Dep. 11 Grand Rapids, Mich.

Red Wave Seed Wheat—Sample and for stamp. FRANK DICKINSON, Springport, Mich.

Silver Plated Milking Tubes.



For hard-milking cows or sore teats, self-retaining. Prices, 2 1/2-inch, 25c; 3-inch, 30c, 3 1/2-inch, 35c. Send orders to The Michigan Farmer, Detroit, Mich.

and proclaimed Caesar the murderer. The two old ladies made a terrific fuss over a mere cat, said they wouldn't have taken a hundred dollars for their pet, but finally agreed to settle with Tom's father for five dollars.

After that incident, Caesar served another term in confinement, but when the baby came home, of course he had to be released from his prison. Tom stoutly maintained all through the term of imprisonment that Caesar's crime was a case of self defense, that it was the cat's fault, that if the cat had not molested Caesar he wouldn't have bothered her or even condescended to notice a mere cat.

His next important offense was a supposed attack of a girl on a bicycle. She tumbled off just as she was passing him on the street, and, of course, what self-respecting dog could resist showing his resentment of a girl who would deliberately throw herself on top of him or even try to. He tore her dress, or she said he did, and Caesar couldn't deny it. Tom declared she tore her dress when she fell off the bicycle, that it got caught in the machine in some way, but Caesar was mixed up in the affair, and circumstantial evidence was decidedly against him. The bicycle, too, was disabled so that she couldn't ride it home, and a complaint was again laid before Tom's father about the dog. He was again in disgrace.

His last and most serious offense was tearing the pants of a crusty old gentleman who, when he went out walking, always carried a cane. Tom asserted that if the old gentleman hadn't brandished the cane at Caesar, or hit him with it, that Caesar wouldn't have meddled with him.

For this crime Tom's father was summoned to appear before a magistrate and defend himself against the charge of keeping a vicious dog that was a nuisance and a danger in the neighborhood. "This is the last bill I expect to pay for the capers of that cur," was the rather significant remark made to Tom after this episode. Privately, the father made up his mind to kill the offending animal as soon as he could do it, and dispose of him without Tom's knowledge.

Several days passed and, as the dog incident was not discussed further Tom began to breathe freely. He was disgusted and ashamed of Caesar, but he did not wish any harm to come to him.

At the end of the long square where the Barnes family lived ran a branch line of the D. & O. Railway. Tom's father had to cross the track every day he took the street car on the next street. One bright day in early spring, when every living thing longs to be out of doors, Baby Gertrude slipped out as her mother was busy with afternoon callers in the parlor, and toddled down the street. It could not have been many minutes that she was out of sight, but it happened that the 5:30 express was due. Already it was coming thundering along as Tom's father stepped off the street car one block away. The sight he beheld was one he will never forget. There was his baby making her way across the track, entirely oblivious to the oncoming express. He shut his eyes for one awful moment, expecting the next to have the mangled body of his child laid in his arms. But quick as a flash, far more quickly than one can ever tell the story, there darted before the train the yellow dog whose execution was to be accomplished that very night. Snatching the baby's dress between his teeth, he half led and half dragged her off the track, a moment before the train thundered by.

Women rushed out of houses as the passersby crowded around the little group, man, dog and baby. For once Caesar got praise instead of blame. Indeed, if he had been capable of being spoiled he would have been very much puffed up with the unstinted praise that was given him. And in Tom's father's vest pocket was the little package of poison which had been purchased to end Caesar's earthly career.

Needless to say the day for the execution was indefinitely postponed, and it will probably never come. Just what happened after that event to make Caesar mend his ways no one knows, but reform he did. Maybe all the kindness that was lavished on him for saving the baby's life had something to do with it. He still loves to get into disputes with other dogs, but it is years since he has been in a real fight. He can even pass a chicken yard without attempting to frighten the dwellers therein, though no one knows how strong the temptation is, sometimes. In most respects Caesar is a model dog, which goes to show that no dog, however bad, is past redemption or reformation, if he is given a fair chance.

Don't Wait for the **LIGHTNING** to Strike your Home.

It means death and destruction when it comes. Why take chances? You owe it as a sacred duty to your family to guard them and their home from the fateful and terrible lightning. Don't delay. There is certain, absolute protection in

The **DODD SYSTEM** of Lightning Control

Lightning causes three out of four fires in the country. Proven by statistics of fire insurance companies.

Insurance companies urge you to protect your home with the Dodd System of lightning protection. It is a matter of business with them. It saves them three-fourths of all their fire losses.

Delay May Be Fatal! Act Now!!

Start by writing us. You will be serving your own best interests. Protection costs but a small fraction of what you have at stake. The rods are erected once for all. It is a permanent investment, adds but slightly to the cost of your buildings, and the reduced rates of insurance quickly repay the cost. See to it that you get the **Dodd System**, the one which affords unquestioned protection, the system which has universal endorsement. It is installed under a personal, binding guarantee to refund all money or make good your damage, if damage occurs. Note the Trade Mark below. You will find it on all genuine D.-S. rods. See that it is on the system you buy.

It will pay you to read our great Lightning Book, a book you can understand. Makes everything plain. Large pages, many striking lightning pictures from photographs. Contains Prof. Dodd's great Lecture on Lightning. Your free copy is waiting. Write for it to-day.

DODD & STRUTHERS,
429 6th Ave., Des Moines, Iowa



Benjamin Franklin, Originator of Lightning Control



West Dodd Originator of the Dodd System



Standard Copper Cable Rods at the Standard Price

WET WEATHER COMFORT

Means the right kind of rubber boots—dependable boots—easy, good-fitting, long-wearing boots—in short,

Woonsocket Elephant Head Rubber Boots

We have been making them for 45 years—as many as 10,000 pairs a day—in the only exclusive rubber boot mill in the United States.

All Dealers—Always Look for the Elephant Head Trade-Mark.

All our other boots and shoes also have the Elephant Head Trade-Mark.

WOONSOCKET RUBBER COMPANY, Woonsocket R. I.

This Thrifty BLIZZARD Ensilage Cutter Makes Short Work

of any feed and our improved wind elevator carries any height or direction. Every BLIZZARD cutter is tested by 50% harder strain than is ever called for in ordinary use. That's why we can and do guarantee them.

Used for 38 Years and Proved Most Practical

Easiest running, strongest. Only cutter with knives adjustable while running at top speed. Self feed table. Mounted or unmounted. Shipped ready to put up. Nothing complicated. Ask for free book, "Why Silage Pays."

JOS. DICK MFG. CO.
1429 W. Tuscarawas St., Canton, Ohio

Send for New Catalog

The Guaranteed Cutter. Why take Chances on Unknown Makes.

Mounted or Unmounted

Fastest Hay Press 2 1/2 Tons Per Hour

Greater capacity is guaranteed in all Spencer Presses. The guarantee with our Alligator Press says "22 tons in 10 hours or no pay." Large feed capacity—smooth and compact bales, uniform in size. Load full weight into cars. All Spencer Presses are biggest money makers because they give greatest capacity at smallest operating and repair cost.

Write today for Free Illustrated catalog E.E. describing full line.

J. A. SPENCER
104 William St., Dwight, Ill.

Buy Guaranteed Capacity

1 MAN AND ONE HORSE BALE

1 TON an HOUR

Do Your Baling Cheaply

Our Daisy SELF-THREADING, self-feeding one-horse hay press is the only one on which one man can do all the work. First successful self-feeding device. The self-feed and automatic condenser materially increase results. Open side hopper. Write today for circular K-196 which gives prices and reports of actual work.

Geo. Ertel Co. Quincy, Ill.

"RANGER" BICYCLES

Have imported roller chains, sprockets and pedals; New Departure Coaster-Brakes and Hubs; Puncture Proof Tires; highest grade equipment and many advanced features possessed by no other wheels. Guaranteed \$5.95.

FACTORY PRICES direct to you are less than others ask for cheap wheels. Other reliable models from \$12 up. A few good second-hand machines \$3 to \$5.

10 DAYS' FREE TRIAL. We ship on approval, freight prepaid, anywhere in U.S., without a cent in advance. DO NOT BUY a bicycle or a pair of tires from anyone at any price until you get our big new catalog and special prices and a marvelous new offer. A postal brings everything. Write it now.

Tires, Coaster Brake Rear Wheels, lamps, parts, and sundries half usual prices.

Rider Agents everywhere are coinng money selling our bicycles, tires and sundries. Write today.

MEAD CYCLE CO., Dept. T-77, CHICAGO.

HANDY WAGONS For Farm Work

Low, no high lifting, last all time. Easy for horse and man. Broad tired steel wheels cannot be broken and do not make ruts. No tire setting, nothing to dry apart. All tire widths. Write for free book to-day to

ELECTRIC WHEEL CO., Box 35, Quincy, Ill.

ELECTRIC

Clover Seed is Lost When Rake and Tedder are Used.

WHEN you cut hay, why don't you get the most out of it? You can save \$2 to \$5 an acre in seed when you make hay with a

THORNBURGH SIDE DELIVERY BUNCHER & WINDROWER

It saves the clover and alfalfa seed from being threshed out by a dump rake or tedder. It turns the hay over gently and lays it in loose windrows, where it is easily cured.

The THORNBURGH SIDE DELIVERY BUNCHER pays for itself every day that it is used in more seed, better hay and less labor. Over 63,000 now in use.

Write for our Catalog and send your dealer's name.

THE THORNBURGH MANUFACTURING CO.,
Dept. E, BOWLING GREEN, OHIO.

Quick Work Digging Potatoes With The Schreiber

Potato Digger

Works perfectly in any soil. Digs, elevates, separates—all in one operation. Built to last. World's best materials and construction. Has 30-inch wheels, cold-rolled steel axle and malleable main beams. Main gears are interchangeable. Lightest draft digger made—no friction anywhere. Only digger with separating agitators which pulverize soil before it reaches rear of machine—reducing power, wear, and lightening draft. Get our

Book Free—Tells the many money-making advantages of the Schreiber. Proves its wonderful efficiency and superiority. Made in two styles to meet all conditions—Revolving Chain Conveyor Style and Endless Chain Style. Book tells all facts. Write postal now.

The Schreiber Mfg. Co., Dept. 29, Hammond, Ind.

THE LARGEST AND BEST LINE OF WELL DRILLING MACHINERY in America. We have been making it for over 20 years. Do not buy until you see our new Illustrated Catalogue No. 14. Send for it now. It is FREE.

Austin Manufacturing Co., Chicago

THE CLIPPER

There are three things that destroy your lawns, Dandelions, Buck Plantain and Crab Grass. In one season the Clipper will drive them all out.

CLIPPER LAWN MOWER CO.
DIXON, ILLINOIS.