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Equipment of Up-to-Date Dairy Farm

IN building up a profitable dairy business great emphasis must be placed on finding suitable markets. If the cows and surroundings are clean, well-kept and have a thrifty and prosperous air, one can find better markets for his products. Let us consider the farm as a unit in order to see what can be done for its better organization, convenient administration and the air of thriftiness and cleanliness which ought to characterize it.

Clean, dry yards are the first step toward producing clean and sanitary products. If the barn is built on low, wet land, and the cows compelled to wade through a mud-hole when going out and in it is almost impossible to produce clean milk. Whenever possible it is best to locate the barns and yards on well-drained land.

Other conditions being favorable it is always best to locate the buildings so that the business can be most economically and efficiently conducted. Providing the water supply, drainage aspect, protection and general outlook is favorable, the barn and cow yards should be located as near as possible to the geographical center of the farm. It is important, of course, that the buildings be located within easy access to the public road, and in case the road touches only one side of the farm, this may justify an eccentric location. The main points to consider are the saving of labor in handling the dairy herd and coming and going from the buildings to various parts of the farm, or between the buildings and the stores, markets and railway station.

Good sanitary stabling is an integral part of success in the effort to produce clean products. The demand for clean products and the practical experience of dairy farmers is rapidly evolving a fixed type of dairy barn. This barn is about 36 feet wide and as long as may be necessary to accommodate the size of the herd. When so constructed there are two rows of cattle facing outward, with a ten-foot drive between through which a manure spreader or litter carrier can be driven for the removal of the manure. It affords plenty of room to facilitate the work of feeding the cows and removing the manure. Assuming that we have a two-foot wall, which I believe is correct, the 36 feet inside measurements may be divided in the following manner:

Two feeding alleys $5\frac{1}{2}$ ft. each, or 11 ft.; two mangers $1\frac{1}{2}$ ft. each, or 3 ft.; two standing platforms $4\frac{1}{2}$ ft. each, or 9 ft.; two manure gutters $1\frac{1}{2}$ ft. each, or 3 ft., and one driveway 10 ft., making a total of 36 feet.

For average-sized cows the platform should be four and a half feet long, while the larger and smaller cows should have platforms governed by their size.

So far as height is concerned I believe that eight feet is correct. Too high ceilings mean cold stables because the warm air rises above the cows, and the fact that the air is cold does not necessarily mean that it is pure. If the ceilings are low it is difficult to get enough light, sunshine and ventilation. As regards lighting, it is best to avoid extremes. Plenty of light and sunshine is essential to the health of the cows. It is, however, expensive to have too much glass and glass is colder than a good wall. In order to get the most benefit from sunshine the barn should stand north and south. This provides sunshine and light mornings and afternoons. Southern slopes which permit the sunshine to fall on the barns and yards make them more sanitary.

Concrete floors and mangers are easily kept clean, comfortable for the cows, and

swing stanchion is the best form of tie-up, and that stanchions of angle iron or iron pipe are more satisfactory than those built of wood. The neck bars are small and allow the cow more freedom and are less likely to break. If the best milk is desired, it is very essential to have a chain that can be put under the cow's throat and prevent her from lying down just before milking time.

The silo has won the rightful esteem of successful dairymen. It furnishes exactly what is wanted to maintain the dairy cow's system in perfect normal health in winter. Succulent feed is craved by every animal at all seasons of the year. Tender and nutritious pasture grasses make a ration perfectly suited to dairy cows and hard to imitate. The longer the pasture season the better the cows thrive. The dreaded gap between fall and spring pasturing or during se-

choice products in a house that is foul smelling and filthy.

Convenient and efficient systems of watering the cattle and to supply the milk house save much unpleasant labor and help to keep the cows up to maximum production. Individual watering basins by the side of each cow are a good thing, but they should not serve as an excuse for keeping the cows inside all of the time, for they need the run of the yards every day, although it is not advisable to keep them out for very long periods if the weather is cold and stormy.

Location plays an important part in determining which branch of the dairy business to pursue. For milk or cream selling the farm must necessarily be located near the market, or near some shipping station. For producing butter or cheese, or raising dairy stock to sell, it may be located far from a public conveyance or market; in fact, for these purposes the advantages of a farm remote from market or public conveyance may be more favorable than near, as land is much higher and help more expensive near a market and transportation lines.

Some of the cheaper farms are best suited to raising hay, corn silage and pasture grasses. Such farms are cheaper and can be put to no better use than supporting milch cows and raising young stock to sell. By having the cows freshen during the season of the year when milk producers are usually short, a ready market can be found for all the young cows one can raise. Buyers are continually scouring the country for likely young dairy cows because it is becoming more and more difficult to find them at a time when needed in their herds. By producing summer milk and raising young cows to sell the dairy farmer on cheap lands further from shipping stations and markets can show as large profits at the end of the year as those in the more favored sections.

Many milk producers are paying from \$80 to \$100 for the right kind of young cows from five to seven years old. Such cows can be made to pay their keep and as soon as they drop two or three calves they will have paid every expense and leave good profits for the man who raised them. To grow and develop a grade dairy heifer to the age when she begins production ought not to cost more than \$40 on cheap lands and the net income from the dairy in the summer ought to pretty nearly pay operating expenses of the business.

The production of clean products begins at the farm and unless the dairyman gets his farm efficiently organized to produce the best grade of products he will not be in a position to take advantage of the broadening outlet for products produced under ideal conditions of cleanliness and sanitation. Just how much



Only Under Conditions Affording the Greatest Comfort Does the Dairy Herd Reach its Maximum Performance.

give a more substantial and attractive appearance to the stable. From a sanitary point of view shallow mangers with iron partitions are preferable, but in actual practice I like to have the mangers high enough so that the cows cannot throw their feed out of reach, and so guarded that they will not be reaching for their neighbor's feed. Then cows are sometimes injured by slipping and sliding on the platform while reaching over the low manger. The ideal manger is made in a single continuous trough the full length of the row of cows. Divisions of iron that can be raised and lowered can be used to separate the cow's rations at feeding time. Such a manger can be swept out and used as a watering trough in case it is desired to water the cows in the stable.

Most dairymen agree that in regard to cost, durability and cleanliness a good

ere periods of drouth is spanned by the silo. If possible, one should have two silos; one for winter and one for summer feeding. Properly constructed and situated in a convenient place to facilitate the work of feeding the herd, the silo adds to the efficiency of the farm and greatly reduces the bills for purchased feedstuffs. If kept painted and in good condition it adds to the beauty and attractiveness of the premises.

Every dairy farm should have a clean and sanitary milk house, well supplied with cold water and ice during the summer. Such houses should be away from all contaminating influences and kept clean and free from taints and foul odors. Concrete floors and plastered walls are more sanitary than wood. Whitewashing the walls and ceiling occasionally will add to the general appearance and sanitation of the dairy house. One cannot make

value to place upon things that add to the beauty and attractiveness of the dairy farm in finding better markets for the products is difficult to estimate, still there are very few who will deny that such things have a marked tendency to create a very satisfying impression among those who buy the products, more especially if one is depending upon a trade where the customers may visit the farm and inspect its management. The big hotels, private consumers and ice cream manufacturers are annually demanding more and better cream, while the whole milk trade, both the city trade and the big condensary plants are putting hundreds of creameries and cheese factories out of business. In another article I shall discuss some of these broadening outlets for dairy products and show how it is possible for the man with a well-equipped, attractive dairy farm to find better markets for his products that are produced under ideal conditions of sanitation and cleanliness.

New York.

W. MILTON KELLY.

CULTIVATING CORN.

This summer has been hot and dry and consequently the corn has suffered more or less from want of moisture. The number of times to cultivate a soil depends upon the character of the soil and the season. When the soil has lain for some time without being disturbed, or becomes compact after a hard rain, an ideal condition is formed for the water to rise by capillary action. Cultivation prevents this extra loss of water. The water then, instead of passing directly from the ground passes up through the roots and brings the plant food into solution from below. It leaves the plant by passing out through the pores in the leaves.

The Indiana Experiment Station conducted experiments on cultivating plots of corn a different number of times. Corn that was cultivated five times gave an average yield of 40 bushels per acre, while that which was cultivated six or seven times gave the same yield. Another plot in which the corn was cultivated nine times showed a decrease of two bushels per acre. On the other hand corn that was cultivated three times showed a still greater decrease in production. The farmer who is only cultivating his corn three times can see why, in one way, his corn crop does not yield as heavily as his neighbor's who cultivated his corn five times.

Few farmers cultivate their corn too much. During haying and harvest they are busy and rather neglect cultivating. A one-hundred bushel corn crop can not be produced unless it is cultivated continually through the growing season. It is the general opinion of a great many farmers that after corn is too large to cultivate with a two-horse cultivator, cultivation should cease. It should not cease, the one-horse cultivator, should be used to form a dust mulch and will increase the production of the corn crop quite materially, provided there is a lack of moisture.

The depth of cultivating is very important. I know in particular, a farmer who cultivated his corn to a depth of five inches during dry weather, when it was three or four inches high. He nearly ruined the whole crop, it wilted and the result was a great decrease in the yield. He believes in cultivating the corn the same depth all through the season. The roots of the corn plant grow close to the surface of the ground and spread out between the rows. If the cultivator disturbs these roots after the first cultivation a reduction in yield is sure to result. The Illinois Experiment Station performed several experiments along this line and found that corn cultivated to a depth of two inches five or six times gave the greatest yields.

From these facts it is necessary that corn be cultivated five times to a depth of two inches to produce the greatest yields. A corn crop requires 810 tons of water per acre to bring it to maturity, or is equivalent to seven inches deep all over the field. This shows the importance of conserving all moisture possible.

Indiana.

J. C. KLINE.

COMMON WHITE GRUBS.

A thorough study of the white-grub problem throughout the United States has recently been undertaken by the Bureau of Entomology of the Department of Agriculture, co-operating with the state entomologist of Illinois and with the aid of the Indiana Agricultural Experiment Station. The subject is of the greatest importance to farmers, whose co-operation

is much needed in carrying out the work and securing practical results therefrom. The investigation has only fairly begun, but the Department will issue in a week or two a Farmers' Bulletin—No. 543—on "Common White Grubs," by John J. Davis. The bulletin is not intended as a report, but merely a brief summary of the life history and habits of the insect and a few notes on the best known means of controlling it.

Common white grubs or grubworms, as they are often called, have for years been recognized as among the most serious pests to farm crops, notably corn and timothy, while strawberries, potatoes, and nursery plantings, particularly of conifers, have all been frequently and seriously affected.

Probably the most serious outbreak of white grubs in the history of American agriculture occurred last year. Injury was reported from almost every section of the country north of the Ohio river and westward to South Dakota. In the worst infested districts it was not at all unusual to find from 40 to 60 grubs in a single hill of corn. Indeed, in a cornfield near McGregor, Iowa, 77 two-year-old grubs were found in an area two and one-half feet square and five inches deep. In Iowa, Wisconsin and Illinois, the total damage to corn, timothy, and potatoes aggregated not less than \$7,000,000. The damage to the same crops in the other infested areas can not be figured at less than \$5,000,000, which brings the total loss in 1912, exclusive of strawberries, nursery stock, lawns, and miscellaneous crops, to not less than \$12,000,000.

It is predicted by Mr. Davis that there will be another outbreak of the grubs in 1914 unless they are materially reduced by natural enemies, by artificial means, or by adverse climatic conditions.

An infested field may be thoroughly cleared of grubs by pasturing it with hogs, and this method should be followed wherever possible. Hogs are very fond of grubs and will root to a depth of a foot or more in search of them. Such pasturing may be done at any time during the summer, but it should not be delayed later than the middle of October, nor should it be practiced earlier in spring than April, otherwise the grubs may be too deep in the ground for the hogs to reach them. Domestic fowls should be given the run of infested fields, and especially when the land is plowed, for they are very fond of grubs and will destroy large numbers.

Where it is impracticable to pasture hogs in an infested field much good can be accomplished by plowing the land in the fall. The plowing should be done late in fall, but on the other hand, it should not be delayed until cold weather sets in or until the ground becomes chilled and frosty, for then the grubs will have gone down to their winter quarters beyond the reach of the plow. This year deep plowing at any time in the fall, especially early fall, will be of special value in those sections where the grubs were very destructive last year, since the grubs will then have changed to pupae and adult beetles, and these will be destroyed if the pupal cells in which they pass the winter are disturbed.

The Farmers' Bulletin is a most interesting one and may be obtained free on application to the Secretary of Agriculture or to your senator or representative.

Washington, D. C.

G. E. M.

IS A BASEMENT ICE-HOUSE PRACTICAL.

I would like information on an icehouse in a basement with a wooden floor above. Would the ice keep?

Ionia, Co.

F. H. T.

While there are some rather serious objections to basement storage for ice, it would undoubtedly be possible to keep ice successfully in such a place, providing good drainage is available and sufficient insulating material is used in packing it. Also some provision should be made for the circulation of air to prevent the accumulation of moisture and consequent damage to the wooden floor above.

The essentials to the keeping of ice are first, to have a minimum surface exposed to the insulating material. If packed in a solid cube this condition will be best complied with; second, the insulation, which should be sufficient to protect it from temperature of air or surrounding walls; third, drainage, which is important because the lack of it prevents proper insulation of ice; fourth, the ice itself must be so packed as to prevent as completely as possible the circulation of air through the mass. If these conditions are met a basement or underground storage will be practicable, although more

expensive to construct than a cheap ice-house above ground.

LILLIE FARMSTEAD NOTES.

I am attempting this year at Lillie Farmstead on a small piece of ground, five acres, to grow two crops in one season, and it is a pretty short season apparently. The season was so cold and backward in the spring that we were delayed, and this portion of land was first drilled into early peas for the canning factory. If I remember correctly, these peas were planted the 17th day of April. We have just harvested them. The hot weather brought them on rapidly the very last thing. The canning factory was overworked and could not handle them and consequently we were delayed and the last three loads got so ripe that the canning factory refused to take them, and I suppose they will have to be charged up to profit and loss account. Immediately after clearing the ground of these peas, which, by the way, were sown in rows 28 inches apart and pulled with a common bean puller we disked the ground with a disk harrow and sowed a portion of it to soy beans, and the balance of it to alfalfa.

The splendid rain a week ago wet the ground down quite thoroughly in this pea field, and just as soon as we could get onto the field without having it muddy we pulled the peas. The bean puller, of course, worked the surface of the ground and preserved the moisture, and then we have followed it just as fast as possible with the soy beans and the alfalfa. But in spite of the rapid work the exceedingly hot dry weather has taken a considerable part of the surface moisture. You have to go down about two inches now on this field to get good permanent moisture. In sowing the alfalfa a portion of this I sowed ahead of the disks of the wheat drill and disked it in the same as before, and on the balance of the field I was afraid it was getting a little dry unless we should have rain at once so that the seed would germinate, and I put the spouts on the grass seeder attachment into the regular hose on the drill, and we have put the seed into the ground in the same way that we would wheat or oats. I am not sure but what we have got the seed too deep. I am sure that it is down to permanent moisture, but it may be so deep that it will not germinate, that is, all of it, and come up, but I am willing to run the risk of the cost of the seed and the labor to find out.

This field had alfalfa on it two years ago and I plowed it up because some portions of it needed more thorough tilling before it could be left permanently to alfalfa. We had a crop of lima beans on the field last year on the alfalfa sod, and then peas this year, and now I have re-seeded it to alfalfa. In many places the alfalfa was not thoroughly subdued by plowing and working and we had good, healthy, vigorous plants of alfalfa scattered all over the field, but in spite of this I again inoculated the seed by taking some dirt from the old alfalfa field and screening it through a very fine screen and using the glue method again. This time I purchased five cents worth of glue at the drug store and dissolved it in about two quarts of water and poured this on a bushel of alfalfa seed. I stirred it up thoroughly until every seed was moist with this glue water and then mixed in this fine dirt. Very much of it stuck to the seed so that if this soil was inoculated, and I have every reason to believe that it was thoroughly, some of the bacteria are glued to every one of these individual seeds and ought to give almost perfect inoculation.

I am of the opinion that this sowing of alfalfa will be better than the early sown this year because of the exceedingly dry weather following the early sown.

COLON C. LILLIE.

"THE OUTLOOK FOR AGRICULTURE."

Dean Eugene Davenport, of the Illinois College of Agriculture, delivered a fine address before the alumni of the Michigan Agricultural College during the triennial reunion at East Lansing. The subject was, "The Outlook for Agriculture," and it was considered from the standpoint of what it means and what is the outlook. He brought up the following questions that are worthy of careful consideration: What does the future hold for agriculture in America, who will rule and where will the American people get their bread one thousand years from now? Will the lands be fed or will they

be starved until they revenge themselves upon the lives of the people, and how will the farms look one thousand years from now. These were the questions that are well worth the thought and study of every progressive American farmer.

Four hundred years ago agriculture was unknown in America and all the significant achievements in this field of endeavor have been accomplished in the last one hundred years. Greece and Rome burned the candle at both ends and the proposition before the farmer today concerns conservation and planning for the future. The forces newly engendered will depend upon men who stand where the farmers and scientists are standing today and there are influences affecting agriculture which are favorable and unfavorable, and they are always active and powerful. There is no more farm land available without expensive reclamation in contrast to the days when land could be purchased for \$1.25 per acre and the buffalo rambled over the wheat lands.

No man now born will be a pioneer. As long as fertile lands were free, no great prices could be expected for farm produce and the farmer ranged with unskilled labor, but land-hunger has been a disease ever since the Garden of Eden. Agriculture is a capitalized business and the farm must pay an income on the investment, and the men who cannot make it pay will soon be driven from the ownership of the land.

What will the successful farmer do with his money, buy more land or improve his home, or will he move away and leave the farm to a tenant? The big question is what we as a people do with our land. The limited amount of land is important and not the labor, as the population can be fed as far as the labor is concerned, but the farming area in America that can be added to this country is now less than the area of the state of Illinois. J. J. Hill says that better methods will double the yield without additional expense and long ago Dr. Miles said that the question is not how much we can produce but how much we can afford to produce.

Fertility has been exhausted by producing more than has ever been produced and now the labor and cost of replacing this fertility makes expensive food. From now on a large proportion of human energy must be used in producing food, and the question of how to sustain and advance civilization will be of the greatest importance. There are many forces at work in the advancement of agriculture and fifty years ago a national system of agricultural schools was established. There are few men today that can predict the future, as such men as Johnson, Kedzie, and Miles were able to do fifty years ago and agriculture was not popular then, nor was it an opening to public honors. An evidence of progress is in the universal demand that agriculture be taught in all the secondary schools and some of the best farmers are coming from the city. Ten per cent of the students at the University of Illinois come from Chicago and it all means a breaking down of the old-time bar between the country and the city boy. Farming is a business and as industry is a mode of life, it will overrule and swallow up all prejudice and all things must yield to the forces of agriculture. Politics often inflict colleges and experiment stations with its stigma and some of them are now at the mercy of men who think that form is more important than the business itself.

Upon farmers depends the greatness of our branch of the Anglo-Saxon race. Will each of twenty generations of farmers in the next 500 years live in hovels on the farm in order to build mansions in the city? A people may end their career in a blaze of glory like a rocket, and at the present time we stand at the parting of the ways because America has long enough been exploited for gain to men, and it may revenge itself upon those who have destroyed it. The forces are now lined up for and against the ultimate prosperity of the country and the farmers must not drift, but study and work to preserve their lands for the generations of the future.

Dean Davenport stated in a comprehensive manner the great propositions that are confronting the farmer and the scientist at the present time, and helped to bring us all to a realization of the far-reaching effect of proper methods of farming and the responsibility that is resting on the farmers of America in this great age of prosperity.

Ingham Co.

R. G. KIMBY.

OBSERVATIONS ON SOIL FERTILITY
AND SOIL MOISTURE.

How to Improve Run-down Land.

Land that has been farmed for all it is worth for a number of years and the crops all taken off and sold and no manure put back on the soil is what we term run-down land. The proper way to improve it is to grow clover. If you can get a good heavy clover sod on such land you have done a great deal towards its permanent improvement. In fact, it will raise good crops of almost anything after you are able to produce good heavy clover sod. The question then is how to produce the clover sod. Sometimes clover doesn't do well.

The last few years I have been purchasing some of this run-down land; one 40 acres in particular, the history of which I have known all my life just as well almost as our own home farm. The pioneer on this farm wasn't very much of a farmer. He didn't give his whole attention to farming. He raised something, of course, but he did not plow well and harrow well, did not produce big crops, didn't try to. When he passed away and the farm was disposed of it fell into the hands of a hustling man, a man who plowed and sowed and reaped and drew the stuff all up to Grand Rapids and sold it. This man did this year after year and year after year, until he paid for the farm. But we all know he kept no live stock on this farm at all; nothing was put back, no green manure crops were turned under, nothing but an occasional light sod and the stubble from grain crops.

This land was never tile drained. When I purchased it there was a muskrat house not 15 rods from where the old barn stood. There were one or two other places on the farm that were never plowed because they were too wet. In a real wet season you could not get anything to grow for a rod around these places. In a favorable season you could grow crops pretty close to them. When the season was right this man got good crops, and he was a worker. He plowed well and tilled well, and in the eyes of the world made money, because he paid for the farm. I purchased this farm and at once put in tile drains. That I thought was the very first factor in its improvement. It cost about \$25 per acre to tile it. The next year on one particular field, 20 acres, one-half of this farm, I plowed down a thin meadow and planted corn. The result was an extremely poor corn crop. The next spring I disked this field up and sowed to oats and peas and used fertilizer. I got just an ordinary crop of peas and oats. That fall we plowed the land thoroughly, worked it down well, and seeded to wheat, using 500 pounds of grain fertilizer per acre. People at first would say that this was a pretty heavy application of fertilizer; that it was too much to pay for plant food. But last year was a poor wheat year and we got 25 bushels of good sound wheat to the acre, and this year we have got an extremely fine stand of clover. It is a stand of clover that is really worth seeing.

Now drainage and commercial fertilizer have produced this clover; there is no question about that. From now on I expect to raise paying crops on this field no matter what crop I grow. I probably could have accomplished these results without the use of fertilizer had I taken several years more time to do it, but taking into consideration the time I believe that commercial fertilizer and clover is the cheapest and best way to improve worn-out land, and I think the wheat crop is the place to put the fertilizer, followed by clover. In this way you practically assure a good crop of wheat and a splendid growth of clover following. The wheat pays the cost of getting the land into clover. The other way you can take more time, you do not pay out money for fertilizer, but you are out the use of profitable crops for several years in succession.

On one strip through this field I made quite a heavy application of carbonate of lime for an experiment. The clover is little better on this strip. You can hardly notice it. The casual observer would not notice where we put the lime. It simply shows that this land yet contains a sufficient amount of lime. It has a clay sub-soil. When we were tile draining and dug the ditch down into the clay subsoil you could see streaks of lime all through it, and I was of the opinion that it did not need lime very badly at the present time but I wanted to know for sure and so I made a heavy application on one strip through the field. This proved to me that on this soil it would not be prof-

itable to use lime because the soil doesn't need it.

The Conservation of Moisture.

We have had a splendid opportunity again this year of testing the propriety of rolling and packing the land after it is plowed and keeping the surface well harrowed for preserving moisture. Our hoed crops have suffered very little from lack of moisture. Meadows and pastures and oats have suffered severely. I think wheat also has suffered from the lack of moisture. As I stated before, most all of our land that was plowed this spring was disked before plowing. This, I think prevented quite largely the evaporation of moisture. As soon as the ground was plowed we pulverized it and rolled it and harrowed it and kept it packed down, yet took pains to keep it mellow on the surface. Many years we have been unable to get anything like a stand of corn on the heavy clay spots because it would dry out in this way, but this year we have a fair stand, even on the clay. And in no place on the field was it so dry that the cultivator did not bring up moist earth. Small dry lumps sometimes prevented the corn from being put in deep enough so that all of it germinated, and yet there is a very fair stand even on these worst places. The big traction engine again has demonstrated the fact that it is almost impossible to pack dry soils too much. Wherever the land was thoroughly packed with the traction engine after it was plowed, it has stood the dry spell better than any other place, and other places where we have used the horse roller the land has stood the drought better than it did where we did not roll it at all. If land is plowed up loosely and the weather remains dry the air circulating through this loose soil rapidly takes out all of the moisture, but if you pack it down so that the air cannot penetrate it too freely and keep the surface harrowed, it will save all of the moisture that comes by capillary attraction from the sub-soil and keep the land in condition so that plant seed will germinate and plants will grow. The old saying has been verified, and that is that you can actually work moisture into land.

COLON C. LILLIE.

BUILDING DIRT ROADS.

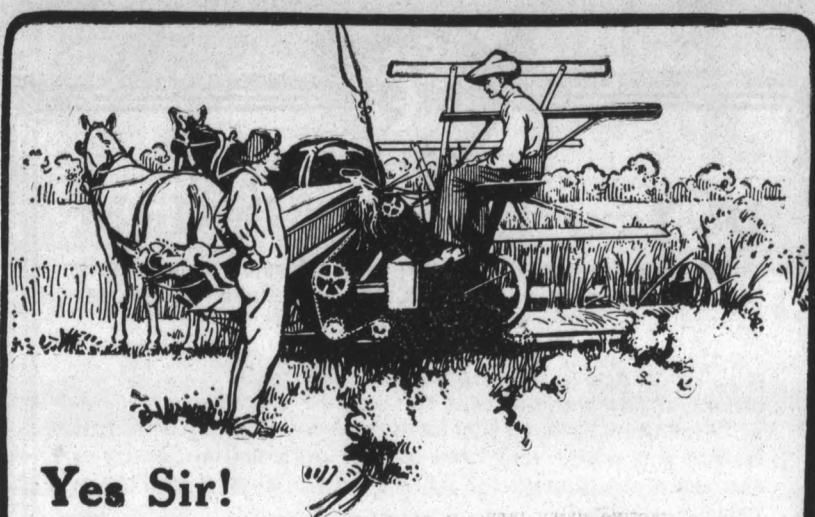
As there is much written and said at present about road building I will contribute a leaf from the experience of one of my neighbors, or, perhaps you might say, from my own observation. I live on a timbered land road. This road has been worked for years after the old style of plowing several furrows by the side of the road and then scraping them into the center. We endured this way of working for years because we knew of no better. The result was mud, mud. In the spring of the year when the frost was coming out of the ground the roads would be nearly impassable.

Finally an experienced road builder moved into the road district and, as the office of pathmaster is not hard to get, he soon found himself at the head of the road district. He started out by breaking all the traditions of the fathers by striking a back furrow through the center of the highway. This action was so unusual that he was subjected to much criticism, but he went ahead and back-furrowed the road from the first back furrow down to the ditches by the side of the road. There was a heavy June grass sod on each side of the trench and this he harrowed until the dirt was well shaken out of the sods. He then struck a second back furrow right up against the first and continued the back furrowing until all the ground was plowed a second time. On some pieces of road he would strike a third back furrow in the center of the road, or more if necessary. The result was the same dirt which was in the middle of the road at first would be there still, except that it would be moved towards the center of the road from two to four feet. A little dragging would complete the job.

I have come to the conclusion that the dirt which is already in the center of the road is better than any other for road building. The rains have washed the muck out of it, leaving the clay and gravel for the new roadbed. Such a road will harden down in an incredibly short space of time. Such plowing should be done early in the season before the ground gets too hard.

Branch Co. O. A. VANDERBILT.

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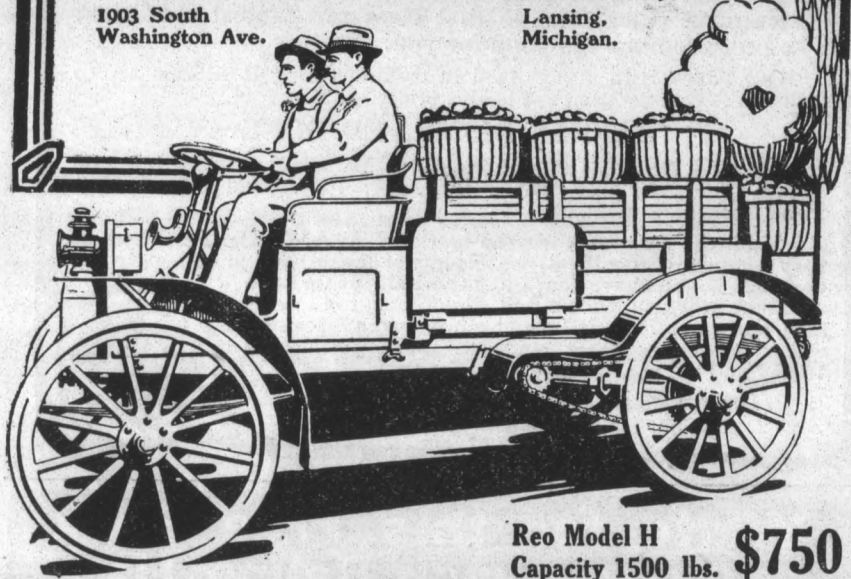
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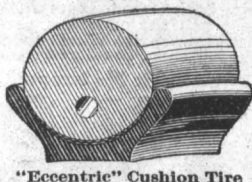
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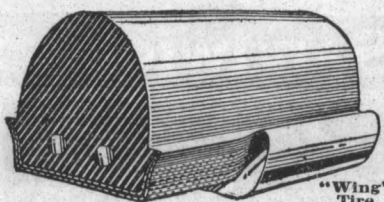
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Poultry and Bees.

GIVING POULTRY THE BENEFIT OF STUBBLE FIELDS.

Despite the fact that grain binders do not waste like men tying by hand, and that farmers as a rule do not wait for their grain to be as dead ripe as they did a generation ago, there is still considerable grain remaining in stubble fields. It is very rare indeed that a field is harvested without leaving enough on the land to repay the trouble of giving fowls access to the field if possible. Apart from the saving of food, the change does the fowls a great deal of good, as it is so complete. From grass, more or less soiled, on to clean, sweet-smelling earth with an infinite variety of weeds and small seeds to be had for the searching (and what search so keen as a fowl's) is equivalent to an autumnal trip to the seaside for us. Those who are sufficiently observant will notice that fowls on oat stubble will brighten up soonest and lay the most eggs; those on wheat will be next; those on barley not so good and while those on peas and beans may lay well they will not have quite so clear and bright a red in the comb. The comb is so vascular that it indicates the slightest change in the condition of the fowl, just as does the complexion of a human being, but in a greater degree.

Fowls do better on stubble fields when we have a dry "after-harvest" (Indian summer), as the grain keeps so much better, and the fowls' feet are dry and comfortable. But even in showery weather they are better for the change, and the grown grain does them no harm. This is one of the curious things one constantly meets with that are past all understanding. Newly threshed wheat, straight from the field, which has never undergone the process of curing in the stack, will cause scours and throw young birds very rapidly out of condition. Corn is a food to be used at all times with great discretion, and though from its composition it is more suited for winter feeding, yet I never find corn of greater value than for mixing with new grain soon after harvest in the proportion of one to two. When all the hens are in the fields, and the chickens are reared away, too, as they should be, the home yard is an excellent place for the cockerels not yet sold, as they will live on the shed grain in the stackyard, and are close at hand for picking out as required.

Movable and Sectional houses.

It is just now that movable houses come in useful; still, a sectional house that can be taken to pieces in a few seconds and loaded on a cart can be moved about as quickly, and the fowls taken to it. Fowls are best taken to their new quarters at night, and if they have had all night to settle down and are on quite unknown ground they will usually go back to the house at night without any trouble. The first evening someone should be in the field an hour before roosting time to drive any stray ones towards the house and to keep them away from the hedges. Hens are like sheep—they are not easily driven. The only way is to quietly head them off in every direction but the one you want them to go, and allow them to take that in their own time. Most of the houses thus placed in stubble fields will be floorless, and where there is danger of pests getting into them by burrowing, a piece of two-inch mesh wire netting spread on the land before the house is set up, and of sufficient area to come outside the house walls a few inches will circumvent the marauders.

When Grain Gets Scarce.

After the fowls have been on the stubbles a week or two the feed may become scarce. However, as long as there is any grain to be seen in walking across the field, they will not starve. It is a good plan to examine the crops of the birds while on the perches occasionally, to determine whether they are getting enough to eat. The fowls will have a high old time if the autumn cultivation commences near them. Beetles, wireworms, grubs, worms—nothing comes amiss to them. No doubt if they knew it they would chuckle the song, "For we are all jolly fellows that follow the plow." Sickly sentimentalists might stop to consider the sorrows of the worm, as one lady did the sorrows of a much blacker individual some years

ago, but it is not easy in this world to have a gain without someone having a loss.

Canada.

W. R. GILBERT.

SECURING GOOD COMB HONEY.

It is by no means an easy task to obtain really well filled sections, though if the sections are properly prepared and placed upon strong colonies or swarms standing near fields of white or alsike clover, or similarly good honey-producing crop, the bulk of the sections will generally be well finished. The great secret of obtaining well filled sections is to crowd the bees. This is done in two ways, either by removing the outer frames from a strong colony and substituting dummies at the commencement of the honey flow, or by giving a very strong swarm limited room in the brood chamber when hived. By adopting the former method the crowding has a tendency to cause swarming but, so long as fine weather continues and the bees have ample but not too much super room, so long will swarming, as a rule, be averted. It is when there comes a change in the weather, compelling the bees to leave the super and further crowd in the brood chamber that swarming is practically certain, unless, during the time they are so crowded, work in the form of comb building is given by substituting empty for full frames in the brood chamber.

I have found it very hard to get the beginner to see the importance of keeping the full working force of the colony together during the entire honey flow. They nearly all seem to think that the more colonies of bees they have the more honey they will get, and it is very hard to make them understand why it is that a good, strong colony of workers will gather a surplus of 50 to 75 pounds of honey, when, if they had been divided and two colonies made out of them, they would probably not have given their owner any surplus honey at all.

I am becoming more and more convinced of the great value of drawn combs. Supers containing sections with full sheets of foundation do very well, but it is plainly seen that those supers containing drawn combs are entered more quickly, and filled with honey, and capped over.

Towards the last of the crop the bees would best be crowded a little for room, for if too much space is given they will be building additional new combs and scattering their honey, while it is best to have all the cells finished and sealed if possible. There is no longer any danger of swarming by narrowing the available space to the minimum, in each hive, and we make sure of much better results, securing more finished sections. Until very recently the most difficult and not the least dangerous of operations in the apiary was the removal of supers, but with accurately fitting parts, and the avoidance of all incentive to the building of brace-combs, the difficulty is removed, while, by the use of bee-escapes, the bees leave the supers without disturbance. There are two or three advantages in putting on a bee-escape. First, you get rid of the greater part of the bees. Then, if there are any brace-combs, or burr-combs, between the super and the brood apartment, these are all broken, and the bees clean them of leaking honey.

New Jersey.

F. G. HERMAN.

If you do not like your breed change as soon as you can, for you will never be successful with a breed you do not like. Do plenty of good thinking before you make the change, as it is expensive not only in money expended but in the experience you have already gained with the breed you have. Give the flock you have a square deal and be sure that the fault lies with them, rather than that you just want a change.

The hens that are yarded should be given the lawn clippings. Then their daily ration is not complete without animal food in some form. Skim-milk, fed separately or with the mash, furnishes a partial substitute for the meat ration.

Be sure to provide some shade in the runs or you will find that some of your chicks will not feather.

Dairy.

CONDUCTED BY COLON C. LILLIE.

INSTRUCTIONS FOR MAKING BABCOCK TEST.

I have recently bought a two-bottle Babcock tester, second-hand, with which there is one beaker marked 175-CC beside the two testing bottles. The instructions for using have been lost so I come to you asking if you will either give me full instructions as to its use, the acid to use, etc., through your columns? Is there any way to get a low test and a high test from the same milk? In testing cream do you use the same acid and the same proportion of it as for milk?

Bay Co.

T. L. T.

One of the most essential parts of the equipment you haven't got, and that is the pipet for taking the sample of milk. As I understand it, what you have is an acid burette, or an acid measure, graduated to 17.6 cubic centimeters, which is all right, and you want to take a sample of 17.6 cubic centimeters of milk, but you could not take an accurate sample with this acid burette or graduated, you have got to have a pipet, which is a long-necked tube, containing a bulb at the center. The 17.6 cubic centimeters of volume require it to be filled up into the stem with a small caliber or opening so that you can get the exact amount of milk in the sample.

I think it would be much better if you would go to some nearby creamery or cheese factory or milk depot that has a Babcock test and see it operated. Of course, you can figure this all out alone. I did once with the first Babcock tester I ever saw when they first came into existence, but it is quite a little job to figure it out and understand all about the details, and still it can be done. But if there is a cheese factory or a creamery or a milk depot anywhere convenient it will pay you to go there and see a test made.

In testing milk the principal thing is to get a correct sample of the milk. If milk stands for any considerable length of time after it is milked the cream tends to rise to the top, and so the milk should be thoroughly stirred. It is better to pour it from one vessel to another. Then take a sample of the milk, and this can be taken in any receptacle. Then with the pipet take from this 17.6 cubic centimeters of milk and carefully put it into one of the test bottles. Then measure out 17.6 cubic centimeters of commercial sulphuric acid, you can get it at any drug store, and pour this into the test bottle. Tip the test bottle slowly and allow the acid to run in slowly and run down one side of the neck of the bottle. If you pour it in too fast it will bubble over and probably spatter some on your hands, which will be serious as the acid is caustic. After slowly turning the acid into the bottle take the bottle and give it a gentle rotary motion until the acid is all mixed with the milk. The acid acting upon the milk will turn it dark in color. Now place the test bottle in the machine and whirl it for five minutes. Then take your test bottle from the machine and put in enough warm water to force the fat up into the neck of the bottle. Now put the bottles back into the tester and whirl them for a minute or so to collect all the fat in the stem of the bottle. Then it can be easily read from the graduated stem. In reading the test you had better have a pair of dividers. Place one point of them at the lower end of the column of fat and one at the upper, and then place one point on the scale at the nought; the other point will indicate the exact per cent of butter-fat and you will make no mistake. You can get printed instructions for making the Babcock test by sending to any manufacturer of this apparatus.

There is no way of getting a low test and a high test from the same sample of milk. The only reason why the test varies is because you are not accurate in taking the sample.

In testing cream it is not satisfactory to take a sample of cream with the pipet because the cream is so thick that it is almost impossible to get an accurate sample. To successfully take a sample of cream is to weigh out the sample on a delicate pair of scales. Weigh out an exact sample of cream and place it in the test bottle and treat it with acid and whirl it in the machine the same as with milk, but in taking a sample of cream you must have a different kind of a test bottle, one with a larger neck, else

you cannot read the fat because the stem of the ordinary test bottle will not contain the fat. Cream bottles are graduated in a different way. The caliber of the neck of the bottle is larger to hold the larger amount of fat.

ANTI-FLY CAMPAIGN GROWING.

Where a few years ago there was general apathy among communities to the dangers that surround the presence of flies, it is not strange now to find a concerted movement toward the eradication of the pest for it has come to be generally recognized now that the anti-fly campaign is one of the most important methods of sanitation. Stables, of course, are the greatest source of fly breeding and the Department of Agriculture has been making some experiments this year in rendering manure piles around stables and on the farms unfit for fly breeding places. The scientists of the department recognized that manure was too valuable as a fertilizer to be destroyed, and the problem was to find a treatment that would kill the flies without damaging the fertilizing properties.

Copperas and several other things were tried, but it was found that all of them in sufficient quantities to kill the flies rendered the manure worthless or harmful. Finally plain lime was tried and the results from this have been most promising. Moreover, many farm lands need lime and if it can be put on the land and used to eradicate flies at the same time, it brings the total added expense very low. The experiments show that about five pounds of lime per head of stock per day is effective, and the cost of this is not over one-half to two cents. So that if the lime is to be used on the land anyhow, the saving is large.

Experiments have been tried by the department in fly screening stables. It is impossible to screen some stables, though most dairy stables can be screened as readily as a dwelling. But it has been found the lime treatment of fresh manure is the most effective precaution that can be taken. At the Iowa State Fair it was impossible to screen the exhibition stables, but the management placed a large number of fly traps not only in the stables, but all over the grounds. The result was a perceptible diminution in the crop of flies. The same trapping experiment is being tried at the Beltsville experimental farm.

A unique fly trap is that made especially for use in windows of dairies, stables, markets, etc. At the bottom is a crack, about a quarter of an inch wide, running the length of both sides. This crack admits the flies to a space covered by a ridge or roof of screen wire with holes large enough for flies to go through (punched with an ice pick) every two inches. Large pans of fly bait—fish heads, poultry cleanings, etc., anything that will attract flies, can be set on the bottom board and thus establish a whirlwind focus for all the flies about the place. The other essential in the construction is the fold or folds in the screen walls. These are simply folds or open pleats running horizontally across the trap, pointing upward and inward. The flies in trying to get in or out of the window, collect in these folds, run back and forth in them until they pop through one of the holes which occur every two inches, and they have never been seen to find a hole on the convex inside surface of the wrinkle and crawl down and out again. This trap is built in a frame which fits closely in a window, preferably on the best lighted side of the building.

Another efficient and easily constructed trap is that designed by F. L. Washburn, of the Minnesota station. The trap is 24 inches long, 12 inches high, and eight inches wide. The upper part, either oval or rectangular, serves as a receptacle which the flies enter through the opening in the top of the middle portion made of ordinary mosquito wire screen and shaped like the roof of a house. Under this is the baseboard upon which rest two tin bait pans. The space between the baseboard and the middle portion is about one-half inch, and between this and the bait pans through which the flies enter, about one-fourth of an inch. Stale meat, bread and milk are used. The trapped flies are killed by immersing in hot water.

Where it is desired to poison the flies instead of trapping them the following method may be used with success: Fill a soup plate with damp sand, cover with a disk of blotting paper, spread sugar on the blotting paper, and sprinkle it with a mixture of one part of formalin (40 per cent formaldehyde) with 20 parts of water.

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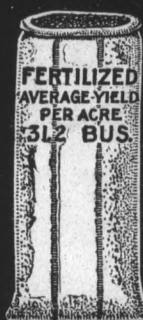
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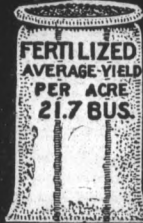


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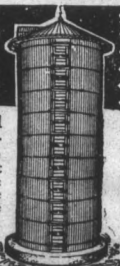
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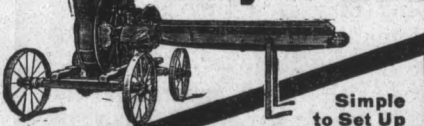
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The Advantages of Live Stock On The Farm.

THIS topic was the subject of an address delivered before the second annual convention of the National Association of Managers of Farmers' Co-operative Companies, held at Milwaukee, Wis., on June 26, by Prof. John J. Ferguson, formerly of Michigan. Mr. Ferguson said in part as follows:

In the last ten years the human population of continental United States increased about 21 per cent. It is very difficult to secure correct figures covering live stock population and production, but data given by the U. S. Department of Agriculture may be taken as approximately and relatively correct. Department figures show a heavy and steadily growing decrease. In brief, with human population rapidly increasing there is no corresponding increase in the meat food supply to feed them.

As against this marked decrease in production, due to purely economic reasons, we must place an increasing number of consumers and marked increase in wealth producing power which means purchasing power on the part of the nation at large. Appetite and demand for high-grade meats is steadily increasing. The people regard meat as absolutely necessary and essential for their well-being. If the spread between supply and demand continues at current rate, meat will soon be classed among the luxuries of life entirely beyond the reach of average wage-earners.

Scientifically equipped and economically operated modern packing houses are doing their part in the way of conserving every pound of product from cattle, sheep and hogs fit for human food. The whole, some, but less appetizing portions which our grandfathers overlooked are now so carefully handled they form a valuable contribution to the food supply. Even this most careful economy is but a fractional factor in solving this problem.

The Country Needs More Meat.. Will it Get it?

The days of wholesale production of cattle on the open range have passed never to return to this country. Farm labor is scarce and high-priced. Farmers are prosperous and as their prosperity increases they are less and less inclined to fuss around with cattle, sheep and hogs, preferring to take first profits, though small, on the grain and coarse feeds which they produce. Increased production must begin on the small average farm. This will not be until the farmer realizes better than he does today that producing market live stock is good business sense and ultimately increased profits will inevitably follow persistent live stock production intelligently carried on. Governments, federal and state, are spending vast sums to encourage agriculture and live stock. Commercial clubs, business men's associations and bankers over the country have seen for several years past and have advised against the tendency of the times in the live stock business. Management of trunk line railroads have installed farm and live stock promotion bureaus, which are having good influence. Railroads have equipped and operated over their lines at great expense special live stock demonstration trains carrying to the man on the land practical lessons proving that satisfactory profits follow live stock operations.

The meat packers at central live stock markets have but little direct connection with the producers of live stock. A packer is a manufacturer who depends upon the man on the farm for his supply of raw material. He must look to the consuming public for an outlet for his various finished products in the form of fresh or cured meats and products incidental to their manufacture. The packer is the central connecting link between producer and consumer. He must conduct his operations in line with supply and demand, so that open markets will be maintained at good prices to encourage the production of live stock and at the same time to handle live stock and their products so economically that the consumer will be encouraged to buy meats. These operations take up the time of the packer so very fully that little time is left for live stock promotion work.

It is a remarkable fact that during the last ten years, when production of live stock has been decreasing, prices for live stock and their products have been slow-

ly but steadily advancing so that lack of interest in the business and decreased production have not come as a result of discouraging market prices for live stock.

Why is More Live Stock Not Produced?

You ask any farmer in the middle west, and he will give you the following:

1. Corn belt land at \$150 per acre can no longer be profitably used for pasture.
2. Fifty acres of 50-bushel corn sold at 50c per bushel brings the farmer \$1,250 per year, which will give him and family a comfortable checking account. Most farmers work on the line of least resistance so they do not care to undertake the extra labor of marketing the corn crop even for more money in the form of beef, mutton or pork.

3. The hired man problem is the most discouraging factor on the average farm today. Good labor has gone west or into the cities and towns, but even so, the more or less efficient farm help available is asking two or three times the wages of 20 years ago. Rather than undertake the unending struggle many farmers have yielded to the pressure of these three factors and have become what are known in the northwest as grain miners. As against these discouragements here are some of the benefits which come to the live stock farmer.

Advantages of Live Stock.

1. The live stock farmer is not dependent upon one or more grain crops of uncertain yield and price. When he has fat cattle, sheep or hogs to sell he is sure an open market is waiting every working day in the year. His live stock is the same as cash in bank and almost anywhere can be realized upon inside of 24 hours. Live stock returns are not spasmodic when the business is properly handled. Further, if he is a specialty live stock farmer his crop is ready when the supply is light and the price at the high point.
2. The man on the farm who sells off wheat, oats or corn is selling raw material on which a number of men will later make a manufacturer's profit. The producer of raw material is usually relatively the most badly paid man in the line.

3. Growing and fattening live stock permits the continuous economical employment of farm labor, which in a system of exclusive grain farming is needed only at special seasons when labor is scarce and price consequently high.

4. Pasturing of live stock and rotation of crops needed to supply them with the necessary feeds is nature's own best prescription for clean farms free from weeds.

5. This same system of crop rotation together with the growing and fattening of cattle, sheep and hogs permits in the highest degree conservation of natural soil fertility, which is the prime object of every good farmer.

6. In sections devoted exclusively to grain growing there is a time every year when farmers complain of shortage of cars, lack of elevator capacity and congestion of loaded cars at terminals. Everyone wants to ship grain at the same time and everyone cannot be accommodated. The daily movement of live stock to market means not only daily revenue for the farmers, but also prevents in the most sensible way railway congestion, enabling railroads to give all classes of shippers more regular and uniformly better service.

7. Live stock in the hands of the farmer furnishes him the best possible security to be offered his local banker. When a farmer wants a little money for permanent improvements on his land or any other legitimate purpose American bankers have found cattle paper absolutely safe and liquid in times of financial peace or panic.

Why Should these Things Interest Farmers' Co-operative Associations?

Because such organizations have for their first and final objects the improvement of the farmer's bank account. The farmer's prosperity immediately measures the prosperity of all other producing classes. Co-operation can be and is being directly applied to the live stock industry with immediate and highly profitable results.

Co-operative Improvement.

Co-operative ownership and use of pure-bred sires for improving breeds of cattle, sheep and swine is already an accomplished and profitable fact in many communities. Many small farmers feel

they cannot afford to pay relatively high prices asked for pure-bred sires of approved quality.

In Denmark a system of co-operative live stock improvement has been followed for years, resulting in dairying and bacon industries in Denmark having become models for the world.

A Permanently Profitable Market.

From our knowledge of the business we are satisfied you will be perfectly safe in using your best efforts to stimulate co-operative live stock improvement over the country. Live stock prices may not and probably will not remain at their present high levels, but if they drop the prices for grain and coarse feeds will take a corresponding drop so that the scale of live stock profits would still be very satisfactory.

THE FARM TEAM.

Good horse flesh is the true source of any farmer's financial returns. If we go into our fields with the proper kind of "power" to propel our improved machinery we can accomplish great results, not only in saving time and labor, but in satisfaction and pride. How much happier any farmer feels with a good, resolute team of horses ahead of his plow. Those that can go the "last round" at quitting time as freely as when they start out in the early day. Of course, someone seems to be destined to have to own and use the more inferior horses, but they should be on small farms where the work is lighter and where there is less acreage to till. If a man has many acres of crops to produce he should not attempt to do it with aged or inferior horses.

The very best method of getting a good dependable team is to buy three-year-old colts that have never been broken or driven enough by someone else that it may have ruined them.

Some farmers are continually having sick horses or horses that are crippled up in some manner. This usually comes from carelessness and lack of "horse sense" on the part of the owner. I have a team of 1,500-lb. horses that I bought when they were two and three years old when I first came to Michigan. This team has been in the harness a good share of the time ever since and have earned their owner thousands of dollars and never been sick or missed a feed. They are good for many years more of hard service.

There is difference in opinion as to the rations that are best for horses. From my experience I had rather have mixed clover and timothy hay and good sound corn. Oats is too light a feed to work a horse on. They are generally chaffy and a goodly share hulls. A horse should not be over-fed or fed or watered when heated up from driving or working. This will bring on sickness or colic. Of course, horses should be fed according to their size and appetite. A 1,000-lb. animal can not digest as much food as a 1,600-lb. one. It is good policy to feed horses plenty of salt and when they get the colic jamaca ginger is one of the very best remedies; an ounce or two will generally ease them, at once but it should be given right on the start.

In Illinois, where I formerly lived, farmers all used back pad harnesses with a check hook and kept their horses checked up. It is amusing here in Michigan to see most of the teams grazing like a lawless yoke of cattle when they are at work. I was going along the road one day and saw a farmer mowing. The hay was very thick and when a horse would reach down to get a bite of hay and the motion of the machine slack down it would clog up and the driver got off several times to dig the knives out, and fooled away much valuable time, while he should have been mowing. I feed my horses in the stable and that is the place for them to eat—not out in the field. It is all nonsense not to check a horse up as they should be.

I have noticed farmers, when working their horses, let them stand on a corner nearly every time around and when they did move you'd have to set up a stake to detect it. This is all foolishness. Any team that is in good working condition should move along at a decent gait and keep moving all day in order to well pay the farmer for their keep. A lazy horse will "eat its head off" and this sort of management is costing farmers much useless expense. A barn full of idle horses is like running a "free hotel." No farmer can afford it.

Washtenaw Co. B. F. WASHBURN.

A TALK ABOUT PASTURES.

Grass, during the season of its growth, is the natural, the best and usually the cheapest food for all graminivorous animals and, when properly dried, makes excellent fodder. There can be no better food for cattle than grass, but in some localities it would be more profitable to mow it, and take it to them in the barn, as is the general practice in Germany, than to allow them to rove over the field, compacting the soil, bruising the plants, and checking their growth. Perhaps the first important thing to be said is not to turn the farm stock on the pastures too early in the spring or overstock it during the summer. Let the roots get well established and then if not over-stocked it will not get grazed off into the ground in the fall and the roots frozen in the winter.

Over-stocking a Common Practice.

In ancient, as well as in modern times, the pastures got stocked with more cattle than they could profitably carry. There was strife between the herdsmen of Abraham's cattle, and the herdsmen of Lot's cattle, about the common pasturage, and to prevent fighting the two patriarchs had to divide the country between them. There has been bitter strife between the ranchers on the western plains, and the cow-boys and the sheep herders have fought bloody battles for the pasturage.

Fertilizing Pastures Commonly Neglected.

Our pastures would support more cattle than they do now if they received better treatment. They seldom, if ever, receive any fertilizing except the droppings of the cattle quartered on them. Formerly we sowed plaster on our pastures and meadows every spring and the good effects were quickly apparent, but now it does no good.

Weeds Limit Production.

Pastures soon begin to fail after seeding, not only from the loss of fertility and tramping of stock, but from neglect to exterminate the weeds that soon creep in, and which the cattle will not eat. These are usually deep rooted, such as dock, wild carrot, wild parsnip and daisies, which continue to grow and flourish during a drouth while the valuable grasses are being grazed off into the ground. The pasture lot is apt to be the roughest and poorest on the farm, with probably some shade trees, which is all right, but bushes ought not to be allowed to grow and deep-rooted weeds should be spudded.

Stable Manure for Pastures.

To rejuvenate a run-down pasture there is nothing equal to stable manure applied in liberal quantities, or at the rate of four or five tons to the acre, and the field harrowed well with a spike-tooth harrow to scratch up the hide-bound, compacted surface of the ground and permit the air to get into it. If some of the grasses have run out, grass seed sown previous to the harrowing, will be quite sure to catch and be of great support to the remnant that remains. The manure bestows two benefits. It acts as a mulch on the surface, preventing the ground water from rising by capillary action and be evaporated. Its richness in plant food is soon carried down by the rain to the roots of the starving plants to revive them to their former vigor. The writer has had proof of this. A ten-acre meadow that was running out as regards yield, though timothy and red-top were still alive, was greatly improved by the following treatment: Early in the spring he drew out and spread on one-half of it, five tons to the acre, of good stable manure, and harrowed it well with a spike-tooth harrow. The straw portions of the manure were raked up and drawn back to the stable to prevent them from getting raked up in the hay at haying time. It was surprising to see what a wonderful change took place in that meadow. The grass on the part manured thickened up, grew taller than the unmanured portion and produced twice as much hay per acre. One spring the writer manured part of a meadow intended for potatoes, and when the ground was plowed for the potatoes, four weeks after the manure was applied, the grass on that part had come up through the manure and was thicker, and a good deal taller than on the unmanured portion.

Supplementary Pasture Crops.

Supplementary pasture crops are grown to good advantage. Rye, sown early in the fall will be ready to pasture in the spring before the grasses get started, and will help the condition of the permanent pasture as well as the stock.

Pennsylvania.

J. W. INGHAM.

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DETROIT, JULY 12, 1913.

CURRENT COMMENT.

In an address made before the alumni of the Michigan Agricultural College, a synopsis of which is given in another column of this issue, Dean Davenport, of the Illinois College of Agriculture, referred to a statement made many years ago by Dr. Miles, then connected with M. A. C., that "The question is not how much we can produce, but how much we can afford to produce." There is so much of truth in this statement that every present-day farmer can well afford to give the matter his thoughtful attention.

Off-times we are apt to be misled by statistics with regard to production. Examples of old world production are given us as an ideal to which we should approach in our agriculture. Many times, however, the yields are secured at an expense which we could ill afford. The painstaking and laborious hand tillage which is put on such staple crops as wheat and potatoes in many European countries could not be made profitable here. There it is possible only through the hard labor of the whole family in the field, which practice surely no American farmer would care to emulate.

While it is true that many European countries surpass us in per acre production of many crops, it is doubtful if any of them surpass us in economic production, which is the true test of the farmer's prosperity, and it is due to the ability of the American farmer along this line, aided by the development of labor-saving implements provided by American genius that the American farmer is in a class by himself so far as his general prosperity and independence is concerned.

Economic production has been the measure of our unparalleled prosperity. In this line perhaps no people can teach us, but in other lines which would contribute not a little to our success, we may well take a lesson from old-world experience, notably in the more economic distribution and marketing of our products and in the adoption of methods which will better maintain the fertility of our soil for succeeding crops and generations.

A recent investigation by the U. S. Department of Agriculture was undertaken with a view of obtaining data as to the relative efficiency of the various agricultural extension agencies in influencing farm practices. In this investigation four men were sent out over routes varying from 400 to 700 miles in length in different sections of the country to inquire of each farmer living along the routes passed over as to the assistance which he had obtained from these various agencies, such as publications of experiment stations, and the Department of Agriculture, farmers' institutes, agricultural organizations, farm papers and books and demonstration agents. The results of this investigation have recently been published, the data obtained being summarized as follows:

"Of the 3,698 farmers personally inter-

viewed in this survey, about one farmer in every 1.5 visited takes a farm paper, one in 2.3 receives agricultural bulletins, one in 3.3 attends farmers' institutes, one in 6.5 belongs to some agricultural organization, one in 14.5 writes to agricultural institutions for advice, one in 23.8 has a few farm books, one in 11 gets personal instruction from county demonstration agents in the south, and one in 159 gets personal instruction in the north and west. One farmer in every 2.3 stated that none of the above agencies was helpful in his farming.

"Of the farmers receiving bulletins, 48 per cent put into practice something learned from them, 54 per cent of those attending institutes put into practice suggestions made there, while 79 per cent of those receiving instructions from demonstration agents in the south put into practice the instructions given.

"The replies from 469 farmers who received agricultural bulletins, attended farmers' institutes, and took farm papers indicate that 21 per cent of the number favor the bulletins as being the most helpful source of information on farming, 14 per cent favor the farmers' institute, while 66 per cent favor the farm papers.

"In the case of the 62 farmers who received instructions from county agricultural agents, took farm papers, and received bulletins, practically 11 per cent favored the bulletins, 24 per cent favored the demonstration agents, while 52 per cent favored the farm papers. So far as this survey is an indication, the agricultural press would seem to be at present the most efficient of our agricultural extension agents in reaching the farmer."

The fact that practically two-thirds of the farmers who received benefits from three of these sources of agricultural extension thought the farm papers the most helpful agency along this line and that over one-half the farmers who received benefits from all of the sources mentioned favored the farm papers, is an indication that the farmers' trade paper is the most profitable investment which he can make, although information of educational value should not be neglected from any source where it can be obtained.

Various opinions have been expressed through our columns with regard to the future of the live stock industry. While these opinions have expressed a variety of views, all have agreed that the future holds not a little of encouragement to the live stock breeders and feeders. As bearing upon this point, and interesting at this time when there has been considerable talk with regard to possible importations of meats from other countries, some statistics recently published by the Department of Commerce and Labor are of interest.

While the total value of meat products and food animals exported by the United States has fallen off greatly in recent years, the total value for the fiscal year ending June 30 is \$150,000,000, as compared with \$250,000,000 in 1906. However, the total for the present year is greatly in excess of the value of exports of meats and food animals made by any other country. The total of this class of exports from Argentina in 1912 is estimated at \$67,000,000, while exports from Australia for 1911 are placed at \$31,000,000, New Zealand \$21,000,000, Canada \$14,000,000 and from Uruguay \$11,000,000. These six countries are the chief meat exporting countries of the world, and of the total of exports from them the United States not only furnishes the largest amount, but an amount actually in excess of the aggregate exports of her five rivals.

Notwithstanding the largely reduced number of cattle in the United States, we still have a cattle population of 56,000,000, according to these figures, as compared with 29,000,000 in Argentina, while in the total number of food animals, including sheep and hogs, the United States leads the world with 169,000,000 as compared with 104,000,000 in Australia and 98,000,000 in Argentina, as representing other meat exporting nations. The principal shrinkage in our exports has been in cattle and beef, pork products having shown but a slight reduction.

The greatest factor of encouragement in the situation, however, is the fact that other meat exporting nations do not compare with us in quality of the product produced, and the American farmer who produces quick maturing and high quality of meat animals will be certain to find a profitable market for them, even in competition with the products of the other countries named. Stability should characterize farm production along this line, as only by such constant pro-

duction can farm equipment be profitably used and farm profits be made to reach a maximum average.

The Need of Currency Reform Legislation.

In the last issue upon the causes and effects which have given rise to the need for currency and banking reform legislation, which has been generally recognized by both economists and statesmen in recent years. It was pointed out that this condition of affairs could best be alleviated by the co-operation of financial institutions of the country rather than by centralization under the present individualistic plan of conducting the banking business.

The proposed currency reform bill, lately introduced into Congress, would seek to bring about such co-operation in a more or less forcible manner under the strong hand of the government. Undoubtedly voluntary co-operation on the part of financial institutions of the country would be preferable, but the tendency has been in the other direction in recent years, and inasmuch as currency and banking and credit are almost inseparable subjects of consideration, there is perhaps more excuse for government intervention and control than is the case with other activities in the nature of public or semi-public service.

Certainly the government must be a factor in any scheme looking toward the giving of greater elasticity to the currency, and as the efficiency of more elastic currency in averting the business ills which have already arisen under our present system will depend largely upon the manner in which the provision for increased elasticity is used, a satisfactory measure of government control in this respect would seem imperative. This elastic feature of the new currency bill is based upon the new proposition of permitting the use of approved commercial paper as security for the issue of currency. There would seem to be no good reason why this would not be a safe practice under proper regulation and control. But to be of the greatest value in relieving the present unsatisfactory condition a currency and banking reform law should be made broad enough to permit of business relations between the reserve associations and the state banks, which have become numerous in Michigan and many other states in recent years. This might be a difficult proposition to work out but is one which would be worth while, as by bringing all the existing financial institutions under federal and state control into one system more immediate and far reaching results could be attained.

But if all of our banking institutions cannot be brought into a co-ordinated system at once, it would undoubtedly be desirable to bring about some form of co-operation among those under federal charters to the end that the credit of solvent patrons may not be needlessly curtailed in time of their greatest need. This has been the ostensible aim of the various plans which have been advanced for currency and banking reform in recent years, as it is of the currency bill now before Congress, although the leaders now in power hold different views as to the best methods of accomplishing this desirable result from those who have drawn previously considered currency reform bills, the principal difference being that they would have reserves held in several centers throughout the country rather than in a single reserve bank or association and would maintain the system under government control, rather than under the unrestrained control of the bankers themselves. On this point, as well as on most others which engage the serious attention of Congress, there are good arguments on both sides. There is a very general feeling throughout the country that under present conditions too great control of reserve funds is exercised by a few strong financial institutions, particularly those in New York, which institutions are dominated by the influence of a few leading financiers. There is also a natural belief that under any plan of centralization of reserves in which the bankers retain undirected control, these same influences will predominate. Based upon the assumption that this would be inimical to the best interests of the country, those responsible for the present currency reform bill have sought to substitute what would practically be government control of reserves for this plan.

The arguments against this plan are that it would place too much arbitrary power in the hands of the president which might be used for political purposes and that it would force the bankers into politics as a matter of self-preservation.

Undoubtedly it might open the way for the making of charges of political manipulation whether it existed or not, although no seriously considered charges of this nature have been made where the government has assumed a large degree of control of public service corporations.

In view of the many conflicting opinions held upon this important question in Congress as elsewhere, it is probable that the pending currency and banking reform bill, the important features of which have been summarized in a previous issue will be amended in important particulars in the event that it is passed at all at the present session of Congress. This is perhaps a matter for congratulation, rather than otherwise, since it is well to make haste slowly in important matters of this kind. Evolution is far better than revolution in any matter which is fundamental to the prosperity of the nation, but that evolution has too long been inoperative in our currency and banking system is the opinion of many students of the situation. What should be considered is not the preservation of the influence of our great financiers, nor the political exigencies of men or parties, but the best interests of the country at large. We need currency and banking reform legislation which will make it easier for the solvent man to utilize his credit in time of need and more difficult for the insolvent speculator or dangerous plunger to secure the use of other people's money to carry on his operations, and that without disturbing the normal progress of legitimate business along any line.

HAPPENINGS OF THE WEEK.

National.

Practically the entire business section of the village of Perry was wiped out by fire last Monday morning. The local fire fighting facilities were altogether inadequate to fight the blaze which was fanned by a 25-mile gale, and the Lansing department was called upon, and responded immediately and saved a small portion of the business places and residences. The total loss is estimated at \$200,000. It is believed that the fire started by a spark from a passing Grand Trunk train, alighting on the roof of an elevator building.

The city of Cleveland, by a substantial majority, voted to adopt what is styled a "home rule" charter recently drawn by a commission of 15. The new charter places the control of municipal affairs in the hands of the mayor and councilman, the only elective offices provided for.

The recent announcement of the engagement of Miss Jessie Woodrow Wilson, daughter of President and Mrs. Wilson, to Mr. Francis Bowes Sayre, a New York attorney, is the theme of social interest to the American people and society folks in particular.

The toll of deaths resulting from the recent hot period have reached an unusually high figure. From cities and towns in the central west the total number reported came near the 100 mark, while many others succumbed to the intense heat in New York, Boston, Pittsburgh, Philadelphia, and other large eastern cities. The cool wave that arrived in the central west Saturday undoubtedly saved hundreds from being overcome.

The United States Senate lobby committee is now busy examining witnesses regarding the charges brought by Colonel Mulhall against a long list of high public officials and men of prominence. The committee has been given increased power since the above charges were made public and its work will occupy a considerable time, for not only have the reputations of prominent men been jeopardized in the accusations, but the steel interests, the Morgan financial institutions and other concerns are also involved.

The merging of the Atlanta College of Physicians and the Atlanta College of Medicine, at Atlanta, Ga., forms one of the strongest institutions of science in the south.

The First-Second National Bank of Pittsburgh, the First National Bank of McKeesport, a neighboring city, The American Waterworks & Guarantee Company, and the banking house of S. D. & W. S. Kuhn, Inc., of the city of Pittsburgh, were forced into the hands of receivers through the failure of the first named institution to open its doors Monday morning. The closing of the bank was ordered by the deputy comptroller of currency, after every effort had been made by the institution to meet the government requirements as to the legal reserve.

Forty-five eastern railroads have joined in a statement declaring that they cannot meet the demand made by employees of the roads for higher wages. According to the figures of the railroad managers wages have been increased 50 per cent since 1910 and the present demands amount to an additional increase of 20 per cent. Should the increase be allowed the companies declare that the public must pay higher rates for service.

Five young men ranging in age from 17 to 22 years, were drowned in Lake Erie near Buffalo, when the canoes in which they were riding overturned in a sudden gale. The victims were members of prominent families of Niagara Falls and La Salle, N. Y.

Although press reports intimated that a special session of the Michigan Legislature (Continued on page 41).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

A Summer in the Himalayas.

By CATHALINE ALFORD ARCHER.

By the latter part of April the heat in central India becomes so intense that all Europeans and Americans who can do so, leave the plains for the hill stations of northern or southern India. Some people go away up to Kashmir on the northwest frontier and spend the summer in a houseboat. The trip there is long and tedious, the latter part being by tonga (cart). The most fashionable resort is Simla, where the official class goes, for the seat of the government is there during the summer. Darjeeling and Naini Tal are two smaller stations, but both are quite damp and cold.

Second to Simla in popularity is Mussoorie. Its climatic conditions are as good as can be found anywhere in India, and taken together with Landour, possesses all the social advantages desirable, with an abundance of rest and quiet. The two stations are on the foothills of the Himalayas, the former at an elevation of six thousand feet and Landour a thousand feet higher up.

We chose Landour in which to spend our first summer in India, and to an American girl out from home but a few

only at very high excess rates and freight rates are very high as well.

The trains are in the compartment style with three seats and two upper berths in a compartment. The seats are arranged for sleeping purposes, but every one has to take his own bedding. So we start for a journey not only with the ordinary luggage but with an immense roll of bedding besides.

Then as the food and water to be had along the way are not considered safe, we take a lunch basket which (with the addition of a little fruit perhaps) contains enough food for the whole trip. Besides all this we must have a great clay bottle filled with drinking water. When the first supply is exhausted we can have the bottle refilled with boiled water at any station along the way. Altogether, we have a varied lot of baggage to take into a train, but there need be no embarrassment about it for everyone travels the same way in India.

The first part of the trip, and especially

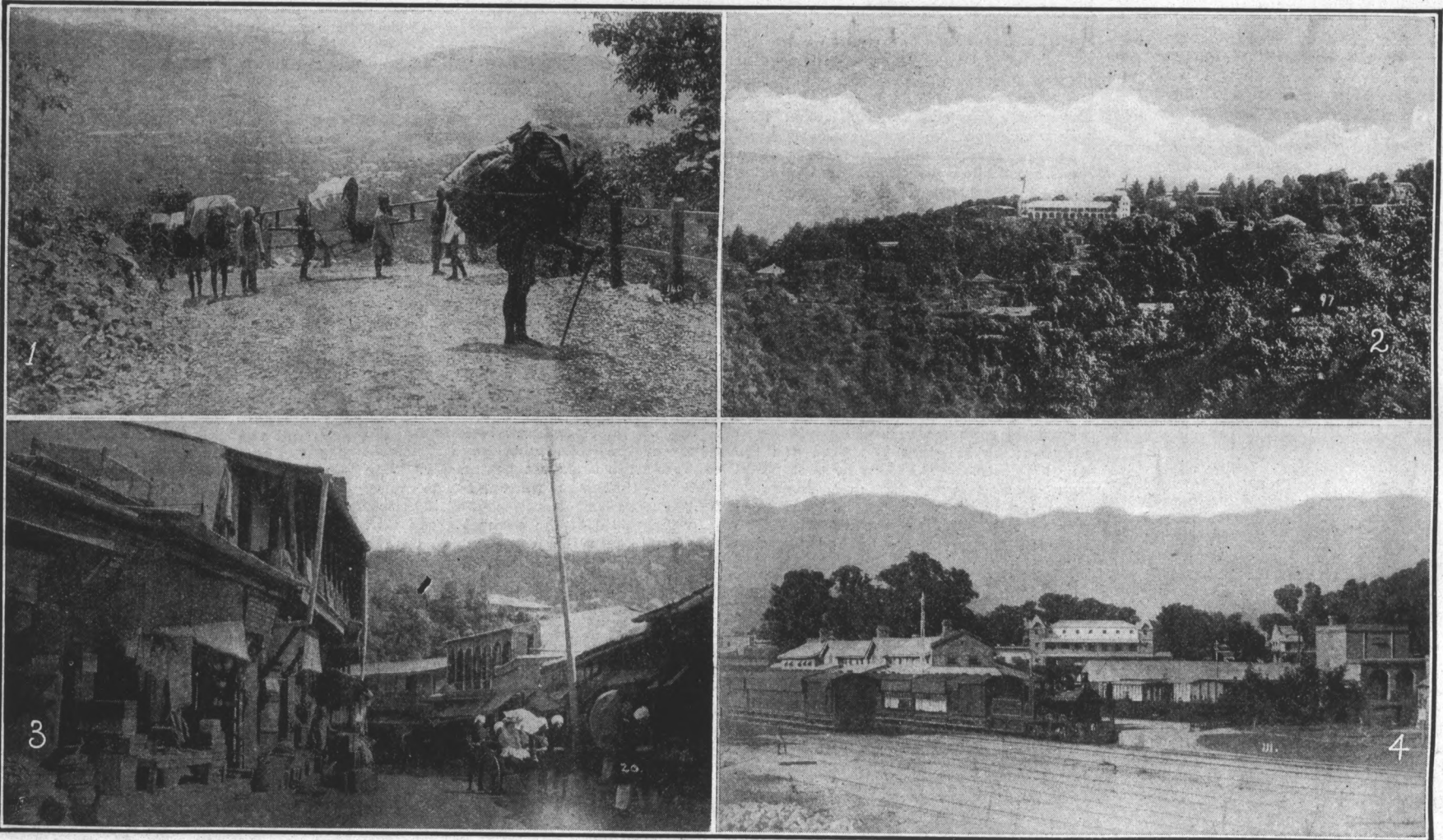
their merits from the standpoint of comfort, which we soon found to be decidedly small. A dandi is a canoe-shaped affair which is carried by four coolies.

Coolies must bring all the baggage also and continuously a great number are trudging up and down with heavy trunks and boxes on their backs. What a hard life is theirs! And in return for carrying a heavy burden up-hill for seven miles they receive six or eight cents! Yet they are wonderfully cheerful fellows and almost without exception honest. Very easy it would be to stop in some secluded part of the road, open a bag or suitcase, take out the valuables and hurry away along one of the isolated mountain paths. No one could trace the man. But in spite of all this opportunity, only one instance of such robbery has been reported.

The climb was monotonous until we neared Mussoorie. Some of the many schools which surround the hill can be seen from the road. First, we passed St.

narrow and crowded like all of its kind. The shops, all huddled together, open out onto the street and the merchants sit in the midst of their conglomerate mass of wares. Swarms of brown children are all about, for the bazaar is the native's home as well as his place of business. Almost everything is sold in the bazaar. Many of the native merchants are direct importers from the European manufacturers and have amassed large fortunes for this country. They live, however, in the same meager circumstances as their humbler neighbors.

Leaving the bazaar, one begins the ascent of the Landour hills. There are three in a nearly east and west line. The roads have been built around each summit, intersecting between each hill. Where the road first divides at the western hill we passed the Church of England. At the next intersection is the Presbyterian church, which was built in 1903 as a memorial to Dr. Kellogg, the most widely-known American missionary to India. When the third hill was reached we took the northern road and soon saw what was to be our home for the



Scenes in India: 1. Coolies and dandi on Rajpur Road. 2. Houses of Mussoorie with snows in Background. 3. The Landour Bazaar. 4. Dehra Dun Station.

months, the weeks spent there were both strange and interesting. The trip up from Jubbulpore in the central provinces requires two days. Traveling in India is quite different from what it is at home, but quite as comfortable. The railways are controlled by the government and the service is very good, there being few accidents, although the trains all make good time. Furthermore, the rate of fare is very low and one has good accommodations at a half cent a mile; or if the journey is a short one it is possible on some lines to go by the third-class at a quarter of a cent a mile. But partially offsetting the cheapness of the fare is the fact that all heavy baggage is carried

from Allahabad to Lucknow, was extremely hot. We were passing through great sand plains where the sun seemed to have baked everything in sight excepting some cacti and a few trees. But as the elevation increased it grew cooler and by the second morning we had gotten out coats and sweaters preparatory to a seven mile drive to Rajpur by tonga.

In Rajpur we had breakfast and a rest and were then ready for the four-hour climb up to Landour. About the hotel veranda were gathered the conveyances which were to take us—ponies for the men, "dandies" for the women. It was our first sight of the queer vehicles of the mountains and we were interested in

George's College, a Roman Catholic institution; soon a large orphanage, and later we could see Woodstock College, one of the best known schools of India. It was established fifty years ago by the Ladies' Board of Foreign Missions of the Presbyterian church of America and still retains something of an American atmosphere, many of the teachers being from the United States. In the various schools about Mussoorie there are five thousand English and American children in attendance.

Without entering Mussoorie, we turned aside to the Landour bazaar, said to be one of the finest bazaars of India. The bazaar street is about a mile in length,

summer snugly nestled under the crest of the great hill.

The white houses of the settlement can be seen scattered all about. Landour is a military station and the soldiers and their families are sent up here every summer from one of the large military divisions. Above us on the hill top is the Army Hospital. Ever since 1828, when Landour was only a half-built colony, invalid men from all the northern cantonments have been sent here. It was the first military hospital established in India.

Our house faced northeast toward the high ranges of the Himalayas. We looked out over a valley, hundreds of feet in

depth where a mountain torrent roared unseen, to a range of higher mountains and far beyond to the towering peaks of eternal snows. When the day was clear, miles and miles of the snow-capped range could be seen, the whole more than 20,000 feet in elevation. But there are a thousand peaks of the Himalayas of such height and what we saw were only a few of them. At evening when the rays of the setting sun streamed in at either end of our valley the whole aspect took on such beauty as to seem almost unreal. The fading sunlight penetrated the clouds and mist, transforming them into orange, rose and purple. It slanted across the bright green mountains, streaking them with gold, and finally fell upon the far-off glistening peaks of snow. Above all, the deep azure of the sky makes a fitting background to a picture so grand that one could not but stand in awe at such a sight.

For the first few weeks after our arrival our chief pastime was examining the contents of the packs which the various peddlers brought around. There are Kashmir walas (men), brass walas, box walas and many others and their frequent visits saved many a shopping trip to the bazaar or to Mussoorie. The Kashmir things were embroidery and drawn work, exquisitely done. There were cushions, centerpieces, shawls and even embroidered rugs, and the most interesting part was the absurdly low price for which truly beautiful things could be purchased. A handsome waist pattern of silk, elaborately embroidered and with drawn-work front could be had for a dollar and a half; beautifully embroidered lunch cloths at from seventy-five cents to two dollars, and many other things in the same proportion. The men always asked at least twice as much as they expected to receive and everyone had to bargain with them. Such fellows all know a certain amount of English and conversation with them is always very funny.

Some are very much offended when they are spoken to in Hindustani and often they will answer in English. One may go to the bazaar and politely ask the price of "matar ka khana" and be told that peas are ten pice a pound! Many of the merchants and high-class natives have learned English ways and some use English costumes. Such "Indian gentlemen" are wonderfully good imitations, too.

The slope by which Landour is approached from the plains is in British territory but the hills and valleys seen on the other three sides form a part of the native state of Tehri, a great section of the Himalayas reaching to the perpetual snows of the Tibetan border. The very nearest villages below us were in Tehri territory, Landour being on the border line. Round about us in the nooks and corners of the mountains were more than a hundred of these villages.

The villagers are all Hindus, although their religion has become almost a demon worship. They do not speak any of the languages of the plains, but a dialect of their own. Many of them came to Landour and Mussoorie during the season. There were the milk carriers who climb up daily from villages within a radius of ten miles; men bringing berries, peaches, apricots or other mountain fruits; the dandi carriers who came from forty to fifty miles away near the Maharaja's capitol, and the men who came for salt, tobacco and cloth for villages, some of them a hundred miles distant.

We could see two or three of the queer little villages on a hill just under us. The small terraced fields were a vivid green since the rains had come and sprouted the crops of grain. A great quantity of the different kinds of grain is raised all about the hills. Of course, the methods of farming are the very crudest, as are all the trades. But the people have few tools just as they have little clothing; few household furnishings, in fact very few of the things we consider not comforts but necessities of life.

The coolies have left their wives to do the farming and they themselves stay about the hill all summer. They live (eight or ten together) in tiny huts, sleeping anywhere—by the side of the road or on the roof of the house, usually with only a stone for a pillow, and have only a few cooking vessels in which to cook their scanty food. They have to work in the midst of the pouring rains of the monsoons and are drenched several times a day. Occasionally one can afford an umbrella, but usually the coolies' umbrella is a hoodlike arrangement of leaves, as much as four feet by two in dimensions. What a queer sight is an umbrella of that sort with only two

black legs showing underneath! Such fellows live on two or three cents a day and by the end of the season they have saved what seems to them a large sum.

The rains worked wonders in the looks of all the vegetation everywhere. Grass appeared on the hitherto bare hills, new leaves came out upon the trees and the weather seemed to an American more like April than July. The flowers and ferns come out in great abundance, the latter of every conceivable variety—tiny hairlike kinds and immense ones with smooth, shiny leaves. Masses of begonias with their delicate pink and white flowers were hidden away under the ferns. Dahlias, too, grow wild. The hill-sides were thick with them and the hosts of red, orange, yellow and scarlet blooms made a gay sight. The little oxalis is native here and it covered large areas. Then there were the beautiful orchids. Those that grow upon the trees bloom later on, but many varieties of the strange ground orchid were found. The lovely little purple one grows up about six inches from the ground, while the white one has six or eight flowers on a stem much higher. The wild iris is another flower of the hills. We were always glad to see some of the familiar flowers of the home land, dandelions, clovers, forget-me-nots, primroses and many of our cultivated varieties.

Earlier in the season the hills were covered with the Himalayan rose, very different from any roses we have at home. The flowers are white and the whole bush at a distance looks more like

the syringa than anything else. Upon close inspection the general form and leaves are found to be that of the rose. When we came in April the rhododendrons were ablaze with their great clusters of scarlet bloom. The trees are so large that rhododendron lumber is largely used for all building purposes. In fact, the mountain oak is the only other valuable timber. We did not recognize the mountain oaks until we saw the acorns for they are so different from other oaks. Nevertheless they are the same big friendly handsome trees as their brothers in the woods at home. Here they are covered with beautiful, velvety moss, and, when the rains come, out of the most lovely feather ferns spring up so thick that often the limbs look like green feather boas.

There were few wild animals about the hills. Some huge gray baboons came up about the house and during the summer two or three bears and a leopard were shot in the valley. Once in a while a fox visits a chicken coop but otherwise almost no animal life is seen, the game having been all killed off by the numerous English hunters.

Here we had the awful, unchanging majesty of the mountains. In Jubbelpore we saw the strange contrasts of the real Indian life, the ever-shifting scenes of a great, cosmopolitan city. Here we felt the inspiration of marvelous beauty; there, the intense appeal of a people remarkable still in intellect, though steeped throughout the ages in false moral and religious doctrine.

When the Ceiling Fell.

By HILDA RICHMOND.

"This ceiling looks shakier than usual," remarked one of the letter carriers casting a glance up at the cracked plastering overhead as he slung his letter pouch off his broad shoulder. "One of these days it's going to come down."

The postmaster quietly reading by the rusty stove caught the words and also glanced upward. "It does look pretty bad, Billy, that's a fact," he said, "but I guess there's no danger. It has looked that way ever since I've been here."

In the general delivery there was a quiet scrambling about, and five minutes later a breathless clerk had everything in apple-pie order. She had whisked the waste papers out of sight, hidden the apple with which she had been relieving her long fast from five-thirty in the morning until noon, for in those days post-office clerks kept long and weary hours, and had neatly dusted her shelves. Now she stood demurely sorting over letters and busying herself between patrons, while in all other parts of the shabby office there was quiet systematic work going on. The letter carrier who felt uneasy about the ceiling was quickly and carefully putting his desk to rights, and the deputy postmaster had a wet rag and was clearing away the dust from the money-order desk. Of all this the postmaster was blissfully unconscious as he resumed his paper and everything was silent.

In the little post-office in the small city of Peru there were only three clerks and four carriers, so that they were like one big family, for all were young and jolly and congenial. They had a complete language of their own, they said, unknown to outsiders or even the postmaster himself, and it often proved a great help to them as well as a great protection.

"Where did you see him, Billy?" whispered the mailing clerk as she industriously cleared her desk and put her belongings in order.

"Over at the hotel getting his breakfast," whispered back the carrier. "He'll be here in a few minutes."

Hardly were the words out of his mouth when an alert, business-like young man stepped into the money-order office and announced that he had come to inspect the office. Everyone knew him and as he greeted them all he noted with pleasure that they were all busy and everything seemed in fine order.

"Lucky escape this time," said one of the carriers to another in a low tone. "If Billy hadn't brought in the word my desk would have been a sight to behold. Mother's been sick all week and I've rather neglected things."

The inspection was quickly made and the young official departed to check up another office, so life settled back to the

old ebb and flow in the post-office. Times have changed wonderfully during the past fifteen or twenty years in regard to work in post-offices, and the old freedom and fun and lack of system are gone forever. In those days clerks and carriers worked over-time, if occasion required, and nothing was said about it. Time was recorded to suit convenience and with little regard for accuracy, but now the clock ruthlessly tells the tale of even one minute over-time and the careful workers must keep within the limit or suffer the consequences.

"Everything looks remarkably clean and neat this morning," remarked the postmaster as he made the rounds after the inspector left. "One would think you folks knew when he was coming."

Nobody said a word, though those with their backs to the gentleman exchanged sly glances. After the satisfied postmaster had gone out a general laugh went up. "If that ceiling ever is repaired I don't know what we will do," laughed the mailing clerk. "It is such a safe and handy expression."

"The P. M. is out now looking for the owner of the building to have it mended," said the assistant postmaster. "He told me that was what he was going for."

In the midst of the general groan that was audible in the corridor outside, the general delivery clerk said quietly: "The ceiling looks dangerous right now."

The rest looked incredulous, but two seconds later the inspector bustled into the room, finding them all at work and quiet. "I forgot some important papers," he said breathlessly. "I was just ready to take the train for Sylvia and missed them. Thank you very much! Goodbye once more! There's my train!" and he dashed away to the station once more.

"I thought you were joking, Louise," said one of the carriers as soon as it was safe. "I thought he left on the ten-five."

"Nobody ever jokes about the ceiling," said the assistant gravely. "That is understood."

"That is right, Mr. Newton," laughed Louise. "Whenever the ceiling is in danger it is a sign the inspector is close at hand."

At that moment the postmaster walked in with the proprietor of the building, a big, pompous old gentleman, and together they looked at the condition of the room. "Something ought to be done," the postmaster was saying warmly. "It is actually dangerous to have to stay in such a building. If something isn't done at once I shall have to report the matter to the Department."

"Report and be hanged!" said the owner explosively. "If the Department wants

to move the office out of my building the sooner they do it the better I'll be satisfied. It's a bill of expense to me constantly, and the little bit of rent they pay hardly covers the taxes and insurance. I'm sick and tired of hearing about repairs all the time. This plastering will be on here when you are all dead and buried." His voice rose until outsiders craned their necks to see what was going on in the office, and after more heated conversation he left the building.

"Of course nothing will be done," said the angry postmaster. "If the Department could find a suitable location they would move tomorrow, but Smith knows there isn't a vacant room in town so he does as he pleases. If I thought nobody would be hurt I'd wish the ceiling would fall one of these days when the trains rush through, and then he'd have to do something. It's disgraceful this way."

It certainly was disgraceful, for no paper hanger had ever been able to make paper stick to the shabby ceiling, and the strips hung in dusty festoons from above. The whole place was discolored with soft coal smoke—the owner furnished rent, light and fuel—and on a dark day it was one of the most forlorn places imaginable. But in the midst of the many unpleasant things they had to contend with the young people did their work well and enjoyed every moment of their existence in spite of the long hours and hard work.

But during the next few weeks the agitation over the destruction of the Maine and the talk of war with Spain put everything into the background, and everyone in the town was in a fever of excitement. Every other interest was forgotten, for in case war was declared everyone had a cousin or brother or sweetheart or friend who would march away, and in the post-office patriotism ran high. One of the letter carriers was a member of the local regiment and he was ready at any moment to start to the front, so life was full of thrills, and even the inspector came in one day unannounced and mercifully overlooked many deficiencies because of the unsettled state of affairs, for he was young and enthusiastic for war himself. But the crowning glory came when the regiment was mobilized in the town because the colonel lived there, and for one week business and everything gave way to the bold soldier boys.

Of course, in a little city like Peru there were no hotels to accommodate one thousand men so suddenly thrust upon them, so schools, private homes, halls, lodge rooms and vacant store rooms were flung wide open to receive them. Ladies served meals in public places and the town gave the soldiers a reception, a banquet and so much attention it is wonderful to record that their heads were not turned. There were street parades and drills and military talk and preparations for going to the front and so much excitement that a stranger might have imagined himself right at the seat of war if he had dropped into Peru just then.

"Of all the unpatriotic people!" grumbled the mailing clerk, straightening up a bunch of circulars in order to cancel the stamps. "Here's Mr. Schmidt sending out circulars calling attention to his superior groceries while we're head over ears in other things. Those soldiers are sending out three or four thousand postal cards a day, and it's no small task to put them in order and postmark them."

"O, well, he's only a foreigner and a newcomer in town," said the general delivery clerk soothingly. "Of course, I think the soldiers should have the right of way, but they'll soon be gone."

"Yes, but if I have to get out all these circulars I'll miss dress parade at five," wailed the mailing clerk. "I always miss my supper to see it and it isn't fair to stay in for this trash."

"Put those circulars aside," said the postmaster from his private office where he had overheard the conversation. "Schmidt ought to know better than to send them out this week. Let them wait till the soldiers are out of town."

Clerks and carriers worked at the difficult task of sorting mail, and often it was ten o'clock at night before the weary workers went home. They went to the office at five in the morning and hardly had time for a bite to eat—their hasty eating could not be called by so dignified a term as meals—and early and late tried to send out the vast numbers of cards and get the incoming mail disposed of as quickly as possible. However, they did not complain, for next to going to war themselves they felt the high honor of doing something for those who were going.

(Continued on page 32).

A LADDIE.

BY ARTHUR W. PEACH.

Waking with the birds at dawn
He tunes his cheery whistle,
And the morning air is smit
As with shrilling missile.
Then the elders rouse and shake
Sober heads quite sadly,
Propheying direful ends
For that noisy laddie.

He is quiet—when asleep,
Doors seem made for banging;
Caps and coats are never found
Where they should be hanging.



Father scowls and sternly growls,
Mother looks on sadly;
But what a quiet house 'twould be
With no noisy laddie.

Gold and power some may have,
Find life nought but pleasure,
Have their cup of happiness
Full to dripping measure;
But no happier man there is
Than the one who gladly
Hears the greeting, "Hi, there, Pop!"
From his noisy laddie!

THE TRUE STORY THAT GREAT-GRANDMA TOLD.

BY ELLA E. ROCKWOOD.

"O, dear," sighed Edith. "What can I do to pass away the time? It is raining so I can't go out to play and I am tired of picture books and dolls. I most wish Saturday would never come, for it's always sure to rain."

"How would you like to have me tell you a story?" asked Great-grandmother Robinson, a sprightly, white-haired lady of 81 who had heard the little girl's complaint.

"O, that would be splendid," was the quick response. "And will it be a true story about the time when you were a little girl and lived with your papa and mamma in a log house?"

"Yes, my dear," responded her grandmother. "It will be just such a story as that. We older people who years ago experienced the hardships as well as the pleasures of pioneer life are anxious to have them handed down from generation to generation so they will not be forgotten. The pioneer is fast passing away, and in a few years more there will be no one to relate these stories of their early life. So draw your little rocker closer and I will tell you of the days when Michigan was a wilderness. When you are grown to be a woman and have children of your own I hope you will not forget to tell the tale to them and so pass it along."

"I was born in Genesee county, New York, in the year of 1830," began Mrs. Robinson, "and when I was five years old father decided to move to Michigan in company with a number of his friends who, with their families, were going to seek for themselves homes in the new country to the west of them which was then just beginning to attract settlers. Perhaps it was owing to its name that Genesee was the place decided on as a location. Flint at that time consisted of only one house, owned by a Mr. Todd. Five miles north of this place father and his fellow colonists located. As they were all temperance men the home of these settlers soon became known as the Cold Water Settlement."

"I was too young to remember all that took place on the long journey, but I knew that we crossed Lake Erie on a boat and landed at Detroit. From there we started overland for our destination with an ox team which carried our house-

hold goods in addition to ourselves. When we reached Flint, after several days' travel, we were at the end of the road. Beyond that point the way was merely an Indian trail, blazed so it could be more readily distinguished."

"What does blazed mean, Grandma?" interrupted Edith who was listening eagerly to every word.

"It means that the trail or road was marked at different places by striking an axe into a tree and removing a piece of the bark a few feet from the ground. This left a white spot which could be plainly seen so that travelers would not lose the way. All new roads through the forest were marked in that way and were known as blazed trails."

"Some of the settlers had preceded us," continued Mrs. Robinson, "and had built for our use a tiny log house. Later, when father built a larger one, I remember that my little sister and myself proudly carried between us the brass andirons from the first dwelling to the second one as our part in the moving. Our chimney was built on the outside of the house and was composed of sticks held in place with mud, instead of bricks and mortar. The floor was of boards brought from Pontiac but the walls were of rough logs chinked with mud. The roof was of long shingles, called shakes, split out of ash timber."

"All of the supplies for the settlement, except meat and vegetables, had to be brought from Pontiac, 35 miles away. The colonists took turns in making this trip, which occupied several days. One man would bring provisions for all the others, which made quite a load for his ox team. Once when it was father's turn to go he was right in the midst of an important piece of work and mother offered to go in his place. This she did. I shall never forget how eagerly we children watched for her return and how delighted we were when we saw her coming. Streams, including Flint river, had to be forded, for there were no bridges, and on the way back, after a heavy shower, mother said the water was so deep at one ford that it came up into the wagon box. But she got across in safety."

"Indians were frequent visitors at the Cold Water Settlement and, although we soon learned that they were friendly to the whites, mother never liked their habit of walking into the house unannounced, for an Indian never stopped to knock at the door. They had even at that early day learned to drink 'fire-water,' obtaining it at Saginaw, an Indian trading post. I remember that on her return from Pontiac mother had brought some dried apples, which were a great treat, as there were no apple trees in the settlement."

The Old Michigan Mill.

Mute Reminder of Days Gone By.

Here is one of the very few remaining relics of the water-power, grist-mill day in Michigan. This one is standing in Allegan county, but for some years has been "off its job" as one may imagine. It is a picturesque point of interest at the summering place by which it is now hemmed in.

One day she had just finished cooking the fruit in the big brass kettle hung over the fire, sweetened it with maple sugar, which was the only kind we had, and set it on a bench outside the door to cool. Presently the door opened and in stalked several Indians, all more or

less under the influence of liquor. Mother was alone with her three little girls, the youngest a babe in the cradle. The red men made no trouble but she did not enjoy the visit and was extremely anxious to have them leave. Finally they started to go. As they filed out of the door the last one spied the apple sauce. Seizing the kettle he hurried after his companions, no doubt anticipating a treat. But mother did not propose to lose the dish she had been at such pains to prepare and, running after the thief, she snatched the kettle from his hand and bore it in triumph back to the house.

"Maple trees were abundant in the forest and furnished the only sugar the settlers had. In our sugar bush stood a tiny log hut where, in huge kettles, the sap was boiled down. At night we children would sometimes stay with father when he was 'sugaring off.' Often we could hear the wolves howling in the forest around us and we could see their eyes glowing like coals of fire in the darkness."

"In spite of the hardships and privations we had a happy childhood and passed many pleasant hours in the old log house."

"But see! child," concluded the old lady, "the sun is shining now and you can go out and play."

"Thank you for the story, Grandma," replied Edith. "I have enjoyed it very much and will surely remember all that you have said."

JACK'S VICTORY.

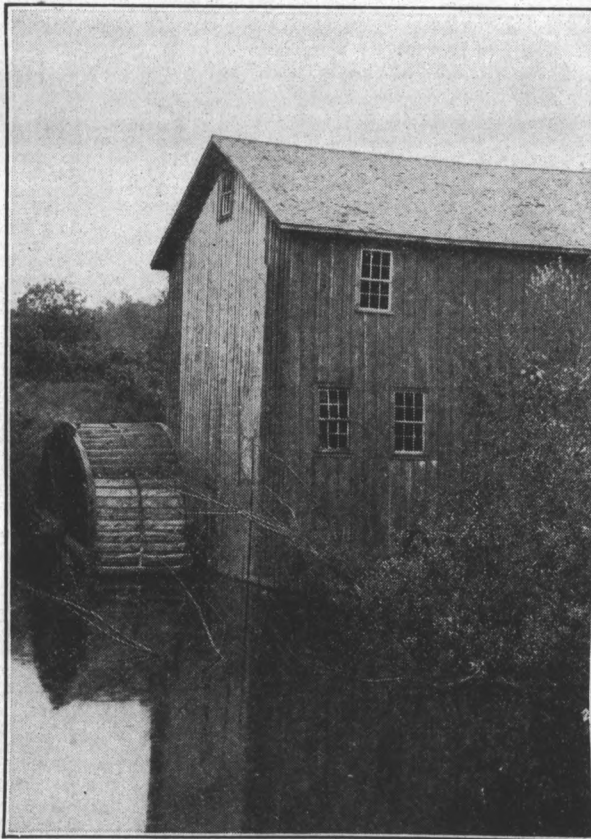
BY MRS. JEFF DAVIS.

Into every boy's life there comes a crisis—a time when he swings himself for the right or the wrong. It may be a most trivial affair that tests him, apparently just an incident, but the trial is there all the same, and its results make, or mar, for all after life.

Jack Marvin's crisis was on him, and a severe test it proved. All that parents, school, church, work and sport had taught him was warring on one side; on the other the law of self-preservation, even at the risk of doing another an injustice.

Somebody had been helping himself from the stock of Sorter & Johnson's big grocery store. Every employ felt worried because of the uncertainty, and impatient to have the mystery solved.

The janitor had served the firm long and faithfully, and was considered above suspicion. Indeed, there was no hint of blame attached to any of the force. It was openly stated that the goods must have been removed by a thief on the outside. But as day after day things continued to disappear, and no clue



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They Thrive on Grape-Nuts.

Healthy babies don't cry and the well-nourished baby that is fed on Grape-Nuts is never a crying baby. Many babies who cannot take any other food relish the perfect food, Grape-Nuts, and get well.

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"In this simple, easy way I saved baby's life and have built her up to a strong, healthy child, rosy and laughing. The food must certainly be perfect to have such a wonderful effect as this. I can truthfully say I think it is the best food in the world to raise delicate babies on and is also a delicious healthful food for grown-ups as we have discovered in our family."

Grape-Nuts is equally valuable to the strong, healthy man or woman. It stands for the true theory of health. "There's a reason," and it is explained in the little book, "The Road to Wellville," in pkgs.

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

Mr. Farmer—Listen to me

"Any responsible party can

buy my scales to be paid for when he sees what he gets and knows there is no misrepresentation. How does that sound? I mean it. Since 1865 I have been fighting competition of all kinds single handed and alone for the benefit of the farmer. I was the first man to cut out the middleman. I was the first man to tell you the exact cost of a scale at your station. I was the first man to sell on approval. I still "pay the freight", I still sell on approval and I still guarantee my scales of all kinds to be the equal of any made and I will sell any style at the lowest price of any scale of equal quality. I do not claim to sell the cheapest but the best. For prices write "JONES, HE PAYS THE FREIGHT," Binghamton, N. Y.

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At once a few men, who are hustlers, for soliciting. No experience necessary. Good salary guaranteed and expenses paid. The work is dignified, healthful and instructive. In writing give references and also state whether you have a horse and buggy of your own. Address
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Boys, here is the best chance that ever was offered to get a good time-keeping watch without it costing you a cent. Read this over and then get busy, if you haven't got the watch as good as in your pocket in a couple of hours, it's because you don't want it bad enough.

The watch is the real thing, 16-size, nickel case, stem-wind and set, second hand, fine watch movement, and keeps absolutely correct time. It's fully guaranteed and if you don't hammer tacks with it or take it apart, in fact, if you will treat it as the friend it will prove to you, the manufacturer will keep it in repair for one year without charge. That's fair, isn't it?

HERE IS HOW YOU GET IT.

Go to three of your neighbors who are not subscribers to The Michigan Farmer, or whose time has run out, tell them that you will have sent to them the Michigan Farmer (the best farm paper in America), every week for a year (52 copies) for only 50 cents. Collect 50 cents from the three of them and send us the \$1.50 you collect, together with the three names and addresses, and the watch will be sent to you at once, post paid.

Easiest thing you ever did. The Michigan Farmer used to be \$1.00 a year and now you only charge 50 cents, (less than one cent a week), and by telling the neighbors that you are after a watch you will likely get the first three you ask. Start right away, the sooner you start the sooner you have the watch ticking in your pocket and telling you at a glance the hour, the minute, and the second of the day. Send your order to

THE MICHIGAN FARMER, Detroit, Mich.

course no open accusation was made, but he caught side glances, and overheard several whispered conversations that made him decidedly uncomfortable.

When the head of the firm sent for him, and warned him to use extra vigilance the last thing at night, and asked him if he had any idea that would help in solving the mystery of the thefts, he almost spoke. He wanted to say: "I don't know who this thief is, but I do know that the last clerk you employed, just before those losses were discovered, is the son of a thief. George Manly's father was detected in robbing the firm for which he worked, and only escaped the penitentiary by taking his own life."

Jack realized that should he speak these words the dark clouds of suspicion, which seemed to be gathering around him, would be concentrated on the head of the new clerk.

"But," he asked himself, "would it be quite fair to conclude that the old adage, 'Like father, like son,' is always correct?"

He recalled the fact that Mrs. Manly had used the entire life insurance to pay her husband's shortage and, in a manner, wipe out a part of the stain on her children's name, although it left the family almost penniless.

Then George had proved quiet, faithful, and efficient, and had never, by word or look, asked Jack to keep silent, and, apparently, Jack was the only one who knew of his past trouble.

In fact the boys had met as entire strangers, and neither had since referred to the time when they were schoolmates in another state. Jack hardly knew why he had not told of their former acquaintance. Partly, perhaps, from a kindly reluctance to refer to a period of George's life of which he might be keenly sensitive, and a desire to give him a square deal in overcoming a disgrace of which he was wholly guiltless.

It had been no trouble to keep silent when there was nothing to lose, but now it was hard not to speak when he imagined the proprietor's tone was frigid with suspicion every time he spoke to him.

Jack's mother was his only confidant, and she consoled him by saying: "I'm proud of you, son. It would not be right for you to say anything that would reflect on George Manly, for no doubt he is as guiltless of these mysterious thefts as you are. All will be made clear some day, and then you will be glad that you did not do an injustice to one who already has much to overcome."

"That is why I have not spoken, mother," Jack replied. "Then to cast suspicion, without any proof of guilt, seems the act of a coward. But it has been hard to keep silent when I feel that I am being looked upon with distrust, when probably he is the real criminal."

"I doubt if anyone has ever suspected you, my son. Your past record places you above distrust. This distressing state of affairs is getting on your nerves, and you are imagining more than is intended."

"Well, I'll keep George's secret as long as I can," Jack promised, "but I'm not so sure that even a past above reproach is always sufficient to allay suspicion. I heard one of the clerks say, today, in a most significant tone, 'Every man has his price.'"

The mystery was solved, at last. Mrs. Marvin knew it the moment Jack entered the room.

"How was it, son?" she asked.

"Oh, mother!" Jack exclaimed, "The store next to ours has been vacant for some time, and a gang of thieves gained an entrance there and have been making their headquarters in the cellar. They discovered a loose board between that cellar and ours, and in that way could get into Sorter & Johnson's store any night. The police succeeded in arresting several of the gang last night."

"Now I know you are glad that you kept silent about George's father," said Mrs. Marvin in a voice that thrilled with pride and love for her son.

"Yes, mother. I've had a lesson that I'll not soon forget. George came to me after we heard the news and thanked me for not voicing the distrust he sometimes thought he saw in my face. It was harder for him than it was for me. He understood that I might at any time say the words that would place him in a most embarrassing position."

"Then Mr. Johnson praised me for keeping silent at a very trying time. He said that he liked a boy who could keep a quiet tongue in his head, and that I might expect a promotion when the firm has something better to offer."

"It seems that he knew all about George's family. They are distantly re-

lated, and he recognized the true worth of the boy, and is going to see that he has a fair chance to make good on his own merits."

"This has been a trying experience for you, Jack," said Mrs. Marvin, "but I am so glad that when the testing time came you proved true metal. Let us always remember it as your great victory."

HIS MAJESTY, KING LEO.

BY S. VIRGINIA LEVIE.

His magnificent outlines and lordly pose, even aside from his prodigious strength, might well characterize the lion as the "King of Beasts." He is the most important and one of the largest of the flesh-eating animals. When full grown it is not unusual for an African lion to measure ten feet from the nose to the tip of the tail. His roar is terrible to hear, and is compared to the sound which is heard at the moment of an earthquake. When in the jungle he lays his head on the earth, and thus the thunder of his voice is conveyed along the ground, to the awe of every living creature within its range.

It is only the male lion which possesses a mane, that appendage which so enhances his kingly appearance. The lioness is quite destitute of any such adornment, and notwithstanding the fact that she is therefore less formidable looking, she is a terrible beast to encounter, particularly when she has cubs to protect. Even should her mate be attacked, it is said she will defend him with energetic fury.

Three baby lions seen at an animal show some time ago were interesting little creatures, with their fluffy heads and innocent, fun-loving faces. The keeper told us he had several times kept young whelps in his own room as pets, and found them quite playful, but that after they were about two months old he considered their company too much of a risk.

Years ago when Sir George Davis was English consul at Naples, a story is related of his visit to a menagerie in one of the dens of which was a lion, so unusually fierce and sullen that the efforts of three years had failed to tame him. When Sir George approached the cage, however, what was the astonishment of the keeper at seeing the great beast rear himself up to lick the hand that was put through the bars, at the same time purring like a cat that is pleased. The fears of the keeper were greatly increased when Sir George insisted upon entering the cage, but the lion showed marked delight, throwing his paws upon his visitor's shoulders, licking his face and running about him much as an affectionate house cat might do.

In explanation of this extraordinary conduct, Sir George said that a sea cap-

collection, too, a keeper assured us—in the same cage with a gentle little sheep. This strange pair had become firm friends and woe unto the person who even in fun attempted to strike the lion's woolly chum.

These animals frequently demonstrate their intelligence in their exhibitions of clever tricks, and one especially tame performing lion allowed himself to be carried out of the arena lying across the shoulders of the woman who had trained him while she held him by his feet.

The following is a well authenticated story of the device of a lion to save her young: it seems that some of a ship's crew had been sent ashore on the coast of India, when one of the number, who was lured by curiosity to stray from his companions, saw a lioness walking toward him. He was in great terror, until the huge brute lay meekly down at his feet. Next she peered earnestly into his face, then looked over at a certain tree towards which she afterwards walked, yet looking behind her as if asking the sailor in thankfulness, and carried away the tree was a large baboon holding two cubs in its arms which the lioness watched intently.

The sailor had been sent ashore to cut wood, and so, provided with his axe, he cut the tree down. Immediately the lioness tore the big monkey to pieces, licked the fur of her babies, rubbed against the sailor in thankfulness, and carried away her whelps one by one.

If you look at the common house cat you will notice enough points of resemblance to prove that it and the lion belong to the same tribe. There is the same fine muscular development, only on a lesser scale, besides the agility and grace of movement which distinguish, in varying degrees, the whole cat (feline) family.

Many who have studied the king of the jungle assure us that he is grateful in disposition, noble in his anger, and displays admirable courage when occasion demands it.

WHEN THE CEILING FELL.

(Continued from page 30).

ing, and fatigue was forgotten. The soldiers quartered in the hall on the third floor of the post-office building made life interesting by singing and tramping about, also by their frequent and unnecessary calling for mail, but everything was forgiven and swallowed up in the great fact that war had been declared and the soldiers were on their way to the front.

"Every man, woman and child in this town, but just you and me, are down at the station seeing the soldiers off," sobbed the mailing clerk the morning the troops were sent on their way. The inspiring notes of the bugle floated up to

Berries That Are Good—By H. C. Kegley.

How luscious were the berries where fancy bade me stray
In my barefooted boyhood, upon a summer's day;
How little like the present, when the berries that we eat
Are gathered green for market, and are scarcely ever sweet.
When I was just a little boy to country school I'd go,
And each day I would pause awhile, along the willow row,
To gather in my dinner pail, and into my face wedge,
Delicious wild raspberries that I found along the hedge.

The sweetness of the thought of them inspires my pen to rhyme,
And memory turns back quickly to that glad summer time
When I went out and gathered, in my old sweat-stained straw hat,
A quart or two of sun-kissed wild raspberries that,
With thick cream poured upon them, finished off the sort of meal
Which, when it had been eaten, always seemed to make me feel
Like going out alone and putting up the crop of hay,
Or shocking a big field of grain before the close of day.

Oh, those were joyous summers, and today I'm wishing that
I could go down along the hedge and fill my old straw hat
With wild berries such as mother birds feed to their young—
The kind of berries which, when ripe, will melt upon the tongue.
I never purchase berries in the market place today
But that some fancied spirit, standing near me, seems to say:
"Go back along the barefoot trails to bramble, hedge or wood,
And gather for yourself the kind of berries that are good!"

tain had presented him with this very lion when it was only a whelp; that it grew up very tame, being allowed to run about loose until it became too large for a house pet. When friends came, the lion was allowed to frolic with them; but on one occasion he gripped a man a little too hard, and Sir George ordered him to be shot. Another visitor begged for the animal's life, and was pleased to receive him as a present. Later on the lion became the property of the menagerie, where he displayed such remarkable memory and affection for his old-time friend.

Only a few years ago many persons witnessed the very unusual sight of a lion—one of the worst tempered in the

the two lonely girls in the deserted, dirty office, but all was strangely quiet except for the music. "It's a mean trick, that's all! The P. M. might have closed the office without an order from the Department," said the general delivery clerk who was also weeping. "They've all sneaked away and left us. It isn't fair!" "Let's lock up and go!" proposed the mailing clerk recklessly. "Who cares?" "What would we lock with? They have the keys. No, we'll just have to endure it. I don't suppose there's another human being up town at this—"

"Is mine circulars all gone out?" inquired Mr. Schmidt at the window in tones of real anxiety. "I meet Mr. Villson on his way to the train and he say

he ain't got the one I sent him. How is dos?"

"No, they have not been sent out," said the mailing clerk shortly. "We've been too busy with the mail for the soldiers."

"Himmell! Look at dot ceiling!" gasped the man at the window.

From force of habit the clerks looked out and not in, expecting to see a post-office inspector at hand, but a peculiar noise caused them to look back at the ceiling. It was a fortunate thing that they did go to the windows to look out, for suddenly with a crash and a volume of water the ceiling was in ruins on the floor. The excitable Mr. Schmidt rushed to the street screaming for the police, the fire department and the world in general, but only the echo of his howls and the faint notes of the bugle from the distant station answered him. He even forgot his precious circulars in his excitement, and jumped up and down and shrieked till out of breath.

Presently the post-office force and the citizens strolled back to their tasks, feeling very patriotic, and they found two cross, bedraggled, disgusted girls carrying the mail to safe places and scrubbing the water down into the basement where they could find a bit of the floor visible. A hasty investigation revealed the fact that the soldiers had turned on the water the last thing before leaving the hall above, and had locked the door and thrown away the key. The water finally burst through, carrying the old plastering with it. Bits of plaster still hung from the timbers and the long dirty strips of paper dripped dismally with water. Speeding away to the south the soldiers were no doubt chuckling over their prank, and the people who had done so much for their comfort were taking the consequences.

"Well, girls, you'll have to invent a new phrase to warn each other when the inspector comes," remarked the postmaster when the excitement was all over and the floor cleaned. "It seems too bad but we'll have a new ceiling, and without an order from the Department. I hope that will be some consolation."

A general laugh went up, and from that day forth the ceiling was never mentioned in the post-office at Peru.

SMILE PROVOKERS.

Miss Elderby—"Do you really think women propose?"

Oldbach—"If they don't there are many marriages I cannot account for."

Country Lady—I've been expecting a packet of medicine by mail for a week and haven't received it yet.

Post Office Clerk—Yes, madam. Kindly fill in this form and state the nature of your complaint.

Lady—Well, if you really must know, it's indigestion.

A celebrated lawyer once tried to get a Boston witness to give his idea of absent-mindedness. "Well," said the witness, who was a typical New England Yankee, "I should say that a man who thought he'd left his watch to him, and took it out'n his pocket to see if he'd time to go hum and get it, was a leetle absent-minded."

The proprietor of the second-hand store was not so tidy as he might have been. One day while standing in front of the store, an Irishman approached and asked: "Hov yez anny clean shirts in yer store?"

"Sure I have," answered the clothing man, anxious for a sale. "Lots of them, so clean as anything."

"Well," said the Irishman, moving away, "go in and put wan of them on."

Down in a southeast Kansas town lives a rather simple-minded youth by the name of Bill Beasley, whose facility in contracting small debts at the local stores is only equalled by his success in evading their payment. One day recently, however, Bill made the mistake of showing some money before one of his creditors and after the hard-fought argument which followed, the money was handed over to the storekeeper.

"Now," said Bill, sadly, "we're square and I want a receipt. Make it legal so you won't be after me again."

And here is the receipt which Bill proudly exhibited to his friends:

"To Whom It May Concern, Greeting: All men know by these presents, habeas corpus and nux vomica, that Bill Beasley don't owe this firm nothing and ain't going to."

July-August BARGAIN SUPPLEMENT

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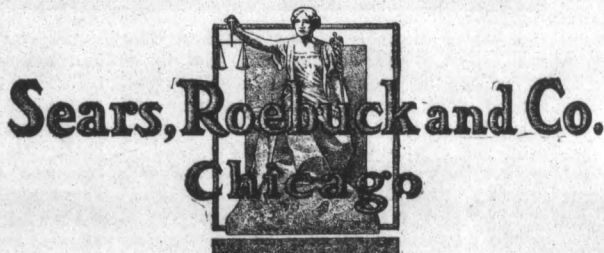
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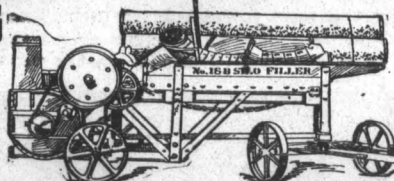
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Woman and Her Needs

At Home and Elsewhere



Pushing on the Lines.

AMONG the sundry ambitions which possessed me when I was a small girl was one to learn to drive a horse. If I could but hold the lines and myself control the animal which drew the carriage I felt that life could offer me no richer joy.

Great was the day when big brother consented to teach me the art of "handling the ribbons," as he put it. And great, indeed, must have been the sight to the onlooker. Perched on the very edge of the seat, arms akimbo, feet braced firmly on the bottom of the buggy, lips firmly clinched and a pained, anxious look on my small mug, I grasped a line firmly in each hand and the conveyance started grandly down the lane. We got safely into the road, not because of any skill in guidance on my part, but because the horse knew the way so well he got through the gate without upsetting us, in spite of me. There, still gripping the reins tightly in either hand I set up such a clucking and "giddaping" that my fiery steed finally stopped dead still in the road and turned around to see what on earth was holding the lines that morning.

Brother explained that it was not necessary to "push on the lines" every minute. He said if I would just sit back quiet and easy, let the lines slack up a bit and not be so anxious about it I would be more of a success as a driver. But I could not bring myself to take it so easy. Driving a horse was a very arduous and important bit of business and I could not let myself relax and slight it even in manner. My driving lesson was not a great success nor were any subsequent ones. I insisted on "pushing on the lines," as brother always put it.

When I grew up and went out in the world to work I kept up that habit. I became a schoolma'am, but always while I was hearing the reading lesson I was thinking about the language lesson just ahead, and when I got to that I began to stew about the arithmetic that was coming next, and while I should have been giving my whole soul to numerators and denominators I was running over the history lesson that came later in the day.

In the home, I came to later, I still "pushed on the lines." I hustled the breakfast onto the table with the gripping fear that I never would have dinner ready in time. While I was sweeping I mentally dusted every article of furniture and put it back in place. Always in my mind I was just two laps ahead of the job in hand, inwardly in a hurry and a commotion over the things that still had to be done.

As a result I have always been tired. To be sure, I have always been working, but many women have done more work and always been as fresh as a daisy. Lately I have come to the conclusion that it is not the work I actually do that tires me. It is doing it over a dozen times in my mind before I get to it that wears on my nerves and keeps me constantly enervated.

I have always had the meals on time, always had the children ready for school on time, always got through with the baking and mending and dusting and canning and writing. Yet I've lived in constant fear that I wouldn't. It seemed a silly way to live, when I thought it all over soberly one night after a particularly trying day, a day when I had died a thousand deaths for fear I wouldn't get a blousewaist finished before night for the small boy, who didn't need it for three days.

A picture came to me of myself as I must have looked to the family that day. Then a memory of a small girl with a tense, strained face tightly gripping the lines and clucking to a 30-year-old horse, and I decided that I had been pushing on the lines all my life. I have not en-

tirely reformed but I am what the tuberculosis experts call an "arrested case." Although I sometimes begin to sweep the kitchen while I am still washing the tins, I never get so far as starting the dinner any longer. I am not so tired, and I devoutly hope, not so snappy.

May my hundreds of similarly afflicted sisters let up on the lines.

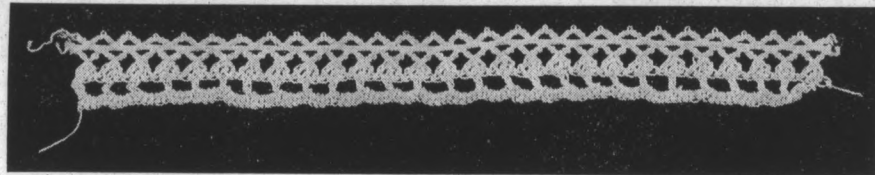
DEBORAH.

WITH BRAID AND THREAD.

BY MAE Y. MAHAFFY.

Plain feather braid and No. 40 spool cotton combined after the manner illustrated makes a highly practical edging and insertion for underwear, bed linen and children's clothing; one that launders well and is very durable.

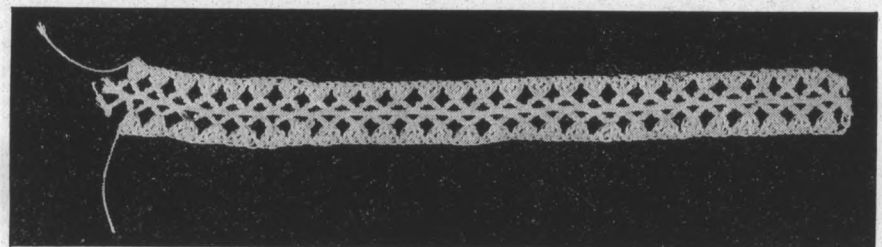
The insertion consists of 3 double crochet (dc) stitches (st) in each point of



the braid, along first one side and then the other. The edging has the dc st along one side only. The work is then turned, 3 st are chained (ch) to form the turn, then ch 2, dc 1 into central dc of previous row; ch 2, dc 1 into center of next group, etc., across the entire distance. Turn the work again, and single crochet (sc) 4 times in each square.

The pattern is so easy to comprehend that it makes a splendid one to give amateurs for their first attempts at lace making.

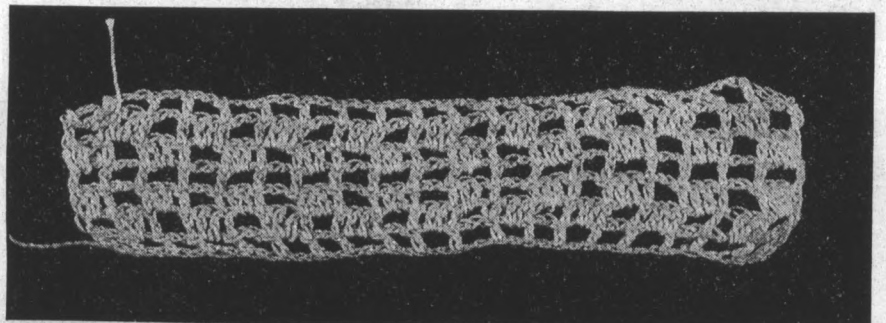
Another simply made design is shown in the filet crochet. This is worked



lengthwise of the strip if a narrow pattern is wanted, making a little over an inch with No. 40 thread. Or, for a 4-in. band it may be made just that length to begin with, and the work continued indefinitely.

To make it ch a strip as long as is needed. Ch 3 extra st for turn, and dc into 5th st from last ch. Ch 2, dc into 3rd st beyond, and proceed thus across space, producing an open square effect.

For the next row ch 3 for turn. Then every other square is left open and 2 extra dc st placed alternately. In the next



row after ch 3 for turn the open blocks are made alternately with the solid ones again, and these are also made to alternate with those of the previous row, that is, the solid work is placed against an open block, and vice versa. The central row is of open squares throughout, and the remaining half of the insertion is

completed to correspond with the first half. For the wide bands the work would be continued this way as long as necessary.

A DAINTY DRESSING JACKET FROM AN OLD SHIRT WAIST.

BY ELLA E. ROCKWOOD.

It was a bride of a year, proud of her ability to use her nimble fingers in housewifely arts who showed me some pretty dressing jackets which she had evolved from an equal number of half-worn shirt waists.

"You see," she said in explanation, as she held out the dainty garments for my inspection, "a shirt waist usually wears out around the neck first of all. Then the sleeves go out of style and we lay the old waists away, feeling that they are too good to destroy yet not knowing what further use to make of them. I had several of these which opened in front which I had had for years, and I went to work to model them into something more useful than they were in their present state.

or blouse are long enough below the waist line to make the peplum part nicely except for the piecing in the back, where it doesn't show.

"I've made over one embroidered muslin blouse. On this I used a plain muslin peplum and belt. The sleeves were already short so I left them as they were, closing the back and opening at the left side of the front as suggested. I made over one for my sister and cut right down through the front, facing both sides with fine muslin. On one side I put tiny buttons and made holes to correspond on the other. A narrow frill of five-cent lace around the neck and down the front made a neat finish. For a change the belt and facings could be made of pink or blue chambray."

As I admired her handiwork I could not help thinking that a wife who possessed such habits of thrift and had the ability to carry them out must be a great help to her husband. "She looketh well to the ways of her household and eateth not the bread of idleness."

DAINTY BELL PEPPER RECIPES.

BY MRS. JEFF. DAVIS.

Bell Pepper Relish.

After all the seeds have been carefully removed, run through the meat-grinder, or chop fine, 12 green peppers, 12 red peppers, and 12 large, white onions. Add to mixture two tablespoonfuls of salt, cover with boiling water, and let stand until cold. Drain through a colander, cover with cold water, and let come to a boil. Take from stove, drain again, and add one and one-half quarts of good vinegar. Return to stove, and let come to boiling point once more. Then set aside until cold before canning and sealing. This is one of the best relishes made.

Bell Pepper Mangoes.

Take large, green peppers, make a slit in the sides, take out all seeds, and soak in lime water that will float an egg for two days. Then change into clear water for one day, changing twice. Stuff with Higdon made of cabbage, tomatoes, onions, and mustard seed. Tie up, cut place, put into jars, and cover with cold, spiced vinegar. No cooking is necessary.

To spice the vinegar for these, put in cloves, ginger, a pinch of mace, and allspice. Do not pound any of the spices. Add stick cinnamon, and some horseradish.

To make the Higdon stuffing: This should be cut up early in the morning. Use as above stated, cabbage, tomatoes, onions, and some mustard seed, all of which can be run through the meat-grinder. Put salt over it to draw out the moisture. Let stand at least six hours, put in a bag, and squeeze as dry as possible. These pickles keep well.

Bell Pepper Ketchup.—No. 1.

To every dozen of peppers add two onions, three tumblers of vinegar, one teaspoon of salt, four tablespoonfuls of sugar. Cut up the peppers, seed and all, with the onions. Now add this to other ingredients, and boil until soft. Mash through a colander, so as to let everything pass except the skins. If that mashes through add it also. Bottle, and seal.

Bell Pepper Ketchup.—No. 2.

Fifty green or ripe sweet peppers, two quarts of vinegar, one quart of water, six onions, two tablespoonfuls of salt, one pound of spice, and one pound of cloves. Put the peppers and onions into a kettle with the water and vinegar, and let boil until soft. Then rub through a colander, and add the spices, and boil a short time. Bottle, and seal while hot.

Stuffed Bell Peppers.—No. 1.

Remove the stem end and seeds from green, sweet peppers, and boil them in salted water for ten minutes. When cool stuff them with dressing such as is used for fowls, cover with buttered cracker crumbs, and bake.

Stuffed Bell Peppers.—No. 2.

Remove the seed from the peppers. To one can of shrimp, or one pint of fresh

shrimp, add the juice of one lemon, one-fourth grated onion, and a dash of red pepper. Mix with mayonnaise dressing. Stuff peppers, and bake a few minutes. Serve quite hot.

Stuffed Bell Peppers.—No. 3.

For a dozen green peppers from which the seeds have been removed, take a pint of cooked rice, a can of tomatoes, and a cup of grated ham. Stuff the peppers with this, and set in oven until brown on top.

Bell Pepper Salad.

For this select tender, green peppers, wash and dry, cut off the stem, and remove the seeds and white fiber. Then shave into fine strips, and add equal portions of chopped olives and celery. Cover with a rich mayonnaise, and serve in tomato cups, or on curled parsley. This salad is very attractive if made with either the yellow or red peppers, and served on crisp lettuce leaves.

Fried Bell Peppers.

Make a batter of two well beaten eggs, two tablespoonfuls of soft butter, a scant cup of milk, and one cupful of flour. Select small peppers, cut into sides to remove the seeds, and fill them with any desired filling. Dip in the batter, coating them well and fry in butter, or olive oil.

SEWING HINTS.

BY MRS. WALTER JACKSON.

Have an extra spool spindle put on the arm of the sewing machine so that a second spool of thread may be ready for use for winding bobbins while sewing straight seams.

I thread the top of the machine with the thread from both spools, but do not put the second thread through the tension. Carry this second thread back to the bobbin winder, place the bobbin and the winder in position, putting thread through guides—just as for winding in the usual way—and begin to sew.

As the bobbins fill quickly it will be necessary to watch closely, to prevent over-filling, until one becomes accustomed to winding in this way. A little experience will enable anyone to gauge the length of a seam to take while the bobbin is filling.

If it is not convenient or practicable to have the extra spindle put on the machine, an ordinary pasteboard box, deep enough to permit the spool to revolve easily, may be used instead. For a spindle use a small hat pin or part of a knitting needle. To keep the box where it will not interfere with the work in hand, use a small paper weight—or any other small object heavy enough to prevent moving of the box.

I have used both methods and have found that much time could be saved. And you always have filled bobbins ready for use when needed.

If one finds it difficult at times to thread the machine needle, a small piece of either white paper or cloth placed under the needle while threading will enable the operator to see the needle's eye more readily.

The hand-sewer will find it a great help to keep a small piece of white paper or cloth at hand when sewing, and, instead of holding the eye of the needle toward the light, hold the eye of the needle toward the paper, or cloth. I have found this great saving in eye-strain—try it.

THE FARM WOMEN'S CONGRESS.

Write to the International Congress of Farm Women, Tulsa, Oklahoma, for the preliminary premium list of the International Exposition to be held in that city October 22 to November 1, 1913. The premiums already announced are valuable and well worth competing for. They range from a tubular cream separator, garden drill and hoe designed especially for women, and other helps for farm women, through a wide list of kitchen necessities, including a kitchen cabinet, sets of aluminum and earthen cooking dishes, hollow handled silver knives and forks for the dining-room, sets of practical and helpful farm and household books for the home or farm women's club library, silk hosiery for the farm woman who likes dainty apparel, and even include beautiful rose bushes for the farm flower garden. This is but a sample of the good things in store, which will be announced from time to time.

Elsie—"After I wash my face I look in the mirror to see if it's clean. Don't you?"

Bobby—"Don't have to. I look at the towel."

MUTTON AND ITS VALUE AS FOOD.

Farmers' Bulletin 526, "Mutton and its Value in the Diet," which has just been issued by the Department of Agriculture, tells of good ways of preparing old dishes and of new ways to utilize, and new dishes which can be made from mutton, and is the latest of the bulletins which have been given the popular name, "Uncle Sam's Cook Books."

In composition and nutritive value mutton is practically the same as beef, and the average loss in weight in preparing the two kinds of meat for the table is also practically the same. As regards digestibility, there is no practical difference in beef and mutton, both being very thoroughly assimilated. The characteristic flavor of mutton is commonly said to have its origin in the fat. Judged by its composition, palatability, wholesomeness, digestibility, relative cost, and the number of ways in which it can be prepared for the home table, mutton is an important foodstuff, which is well worth the attention of the housekeeper who wishes to provide her family with an attractive and palatable diet at a reasonable cost.

SHORT CUTS TO HOUSEKEEPING.

To each quart of sound fruit take two and one-half cups sugar, dissolve it in a little water and boil until it is clear. Then add a little lemon juice, exact quantity not essential to success. Put the berries into the syrup and bring to a boil. Continue the cooking for five minutes, then set away closely covered, over night. Next morning put into sterilized cans while cold and seal as usual, being sure that the air is perfectly excluded. As an extra precaution melted paraffin may be applied to the upper part of the cans. This is a superior method of canning red raspberries.—E. E. R.

During recent years, we have noted a steady increase in the price of hay, in fact all forage is higher, and it is necessary for the stock keeper to produce a forage at less money than hay, if he wishes to realize a good profit on his stock. In this capacity the silo comes as a great boon.

FASHIONS BY MAY MANTON.

Our large Fashion Book—containing 92 pages illustrating over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of 10 cents.



No. 7752—Girl's dress, 6 to 12 years, with three-quarter or short sleeves.

No. 7763—Girl's Norfolk dress, 6 to 10 years. With four-piece skirt, high or low shield, long, three-quarter or short sleeves.

No. 7769—Girl's Russian costume, 10 to 14 years. With four-piece skirt, with or without tunic, with overlapped edges of skirt and tunic having curved or straight corners, long or short sleeves.

No. 7762—Child's dress, 4 to 8 years. With round yoke extended to form a panel, straight skirt, round or high neck, short or three-quarter sleeves.

No. 7668—Child's rompers, 2 to 6 years. With long or short sleeves, leg portions that can be drawn up at the knees or left loose.

The above patterns will be mailed to any address by the Fashion Department of the Michigan Farmer on receipt of 10 cents for each.

Fruits and Vegetables From July to June

—Thanks to Parowax

Preserve all the fresh fruits and vegetables you like—now, while they are plentiful and cheap. Seal them with Parowax and they are bound to keep. Parowax will never fail you.

Think what you will save when winter comes! Think how much better "table" you can set—how your family will devour your own home-canned vegetables, preserves and jellies.

Parowax

is used as indicated in sealing jars, bottles and glasses. It's about the easiest, simplest work one can imagine. But so sealed, vegetables and fruits will keep *fresh indefinitely*. The Parowax way is very inexpensive. Two of the four handy layers contained in the 16-oz. carton will seal several gallons of fruit. And what's left over will be found invaluable in the laundry. Parowax shavings in the wash boiler clean and whiten clothes, without the rubbing. A little Parowax in the starch imparts a beautiful finish in the ironing.

Mrs. Rorer's Recipes
May we send you a book of free preserve and jelly recipes by this famous culinary expert?

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HOMESEEKERS CANADA LOW FARES TO CANADA

Come to Canada now and let us help you pick a choice farm before the best are taken. The Canadian Government is now distributing 135,000 FREE fertile farms along or near the Canadian Northern Railway—Wheat Farms, Poultry Farms, Dairy Farms, and farms adapted to cattle, hog, sheep and horse raising.

Even if you have already located your farm you should travel to it over the Canadian Northern Railway and have the added advantage of traveling from 1,550 to 2,500 miles through Canada's richest farming country.

Just glance over these low rates—tickets are first-class, round-trip, good for twenty-five days, with stop-over privilege. Excursions every first and third Tuesday, via Duluth and Ft. Frances, or via St. Paul and Winnipeg.

To	From	Chicago	Duluth	Des Moines	Kansas City	Omaha	Minneapolis or St. Paul	St. Louis	St. Paul
Dauphin, Manitoba		\$37.50	\$24.15	\$37.35	\$42.05	\$36.45	\$27.35	\$46.10	\$39.55
Regina, Sask.		35.00	30.00	37.50	43.50	37.50	30.00	44.00	34.50
Saskatoon, Sask.		37.50	32.50	40.00	46.00	40.00	32.50	46.50	37.00
Prince Albert, Sask.		37.50	32.50	40.00	46.00	40.00	32.50	46.50	37.00
No. Battleford, Sask.		39.95	34.95	42.45	47.50	42.45	34.95	48.95	39.45
Edmonton, Alberta		46.50	39.50	46.50	47.50	46.50	39.50	50.50	46.50
Kindersley, Sask.		41.30	36.30	43.80	47.50	43.80	36.30	50.30	46.80

(Rates from and to other points proportionately low)

Western Canada welcomed 140,000 Americans last year and will welcome you. American farmers are getting rich on Canadian farms. It's your turn now.

Get these FREE BOOKS

Mail us a post-card or letter today, stating your destination. Ask for "Homeseekers' Guide"—"The Breadbasket of the World"—"Peace River Country"—and how to reach it—full of facts and authentic information. Write today and find out how you can get a fertile 160-acre farm free.

R. P. BELL, General Agent
66 West Adams Street, CHICAGO

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To advertise our business, make new friends and introduce our catalogue of Elgin Watches we will send this elegant watch by mail post paid for ONLY 98 CENTS. Gentlemen's size, high grade gold plate finish, Arabic dial, lever escapement, stem wind and set screw, a perfect timekeeper and fully guaranteed for 5 years. Send this adv. to us with 98c, and watch will be sent by return mail postpaid. Satisfaction guaranteed or money refunded. Send 98c today. Address R. E. CHALMERS & CO., 538 So. Dearborn St., CHICAGO.

When Writing to Advertisers please
mention the Michigan Farmer.

Farm Commerce.

There Should be a Reason for Co-operating.

IN our last talk we concluded that the attempt to establish a co-operative institution in a small way would be likely to result in more permanent success than to start with some gigantic scheme, largely because of the educational limitations of the members in regard to co-operative business. In the analysis of co-operative efforts that have failed to serve the purpose for which they were organized, it appears that there is another factor that requires to be carefully considered and we desire to make that the theme of our present discussion.

The proposition is, that a co-operative society should have a reason for its existence. There must be a legitimate chance for its paying out. Necessity is the hand that drives co-operative associations over the rocks, through the ruts and onto the well-turnpiked road of success. A friend just up from the south where he has been employed in making a study of agricultural conditions of the southern states, remarked in relation to the peculiarity of the prosperous communities, that instead of these progressive sections being provided with all natural advantages they lacked these qualities in both number and degree. The reason why he believed these disadvantageous localities prospered and why others better endowed by nature to succeed were sad failures, was because the exigency required that the people of the former places must plan, and work. So with the institutions of which we are speaking, dire need of them will keep the members loyal when all other bonds fail.

Many co-operative societies are like the seeds that fell on stony ground, they have not enough earth wherewith to grow. There is too little margin of profit to give nourishment for growth, or even life. Why should a dairyman who can easily deliver his milk at the door of his customer wish to co-operate in marketing his product? Why should one who has a special product and a superior market want to join with others and have his high-grade article go out to the consumer with inferior goods? There may be occasions where it would be well to bring together these unequal members but generally the individual specialist would not profit much by co-operation—at least, that appears to be the history of efforts where he has attempted to do so under the circumstances we have named. The matter of bettering the marketing conditions of the members should, therefore, be examined with much caution before deciding to undertake an organization.

Now, regional environment may determine whether there is need for co-operation. Frequently communities are specially fitted for the production of some particular line of agricultural products, like the peach belt of our lake shore, the celery lands of Kalamazoo county, etc. Where there are many men producing a special crop under conditions like these, there organization has a much better chance to succeed than in a general farming district. This is particularly true where the market for the crop is a distant one. What appeared to be a doomed industry was the southwestern citrus business, and it would have met its judgment day long ago but for the co-operative organization that has built up one of the most effective agricultural agencies in the land. So it has been with truck growers of the central Atlantic states.

We should not become confused over what is stated in the last two paragraphs concerning specialization. Where a single individual of a community specializes it is usually not profitable for that person to join with his neighbors who do a general farming business. But where the whole neighborhood is trying to produce special agricultural products then the most ideal conditions for co-operation exist—all have the same cultural problems, need the same class of supplies and are seeking the same market for their products; hence, they can unite and thereby economize in their buying and selling and in seeking remedial measures for cultural difficulties.

Another condition that is frequently discovered and certainly furnishes a reason for the producers to get together is

the organization of the private buyers who operate in a given district. By forming a "gentleman's agreement" to pay prices reported from a central office day by day, operators are able to do away with free competition in bidding for loads of grain or produce. Of course, such arrangements are unlawful but like many other matters that are legislated "out of existence" they still exist and must be dealt with in a practical way. One of the effective ways of dealing with such situations is for the growers to do their own selling, and, of course, this is most economically done through co-operation.

Our time may fittingly be called an advertising era. Producers, whether they be agriculturists or manufacturers, are awake to the advantage of doing publicity work. They desire to let the world know what they have for sale and the advantage the article will be to the buyer. Among certain classes of farmers this work is becoming well-developed, while among others it is growing rapidly. Live stock breeders' associations have shown progressiveness here. We have heard much recently of advertising the superior quality of Michigan potatoes, and in the past of the almost unequalled excellence of her apples and other fruits. Brands of farm products are becoming nearly as common on our markets as are manufactured products and probably will be quite as much so in the future. The most effective and economical way of opening up a market and developing a trade of this nature is through co-operation. If, therefore, the farmers of a community have a product that it is difficult to dispose of, the industry should not be tabooed until those interested have satisfied themselves that a trade cannot be built up by a campaign of advertising.

Accordingly it would seem after a survey of this variety of situations, that men should satisfy themselves that organization would bring the advantages sought. If they cannot find a reason for getting together then why should they add to the derelicts in the stream of progress, another wreck? For without a chance to succeed the venture is certain to fail when opposition is met. A sane, but critical preliminary analysis of conditions that is free from prejudice or passion, will go far toward raising the percentage of successful co-operative institutions.

MARKETING CHICKS ON A LARGE SCALE.

Seventy-five farmers in Crawford county, Ohio, maintain flocks of pure-bred poultry to supply eggs to the large co-operative hatchery located at the little town of Tiro. At present this hatchery is sending out 12,000 chicks a week to various parts of Ohio and other states. The hatchery plant is so constructed as to permit the placing of two rows of incubators which are 800 feet long with a total capacity of 66,000 eggs. The heating is done by hot-water boilers which automatically keep the temperature at 103 degrees. Before being put in the incubators, the eggs are carefully tested for fertility. Each Tuesday of the hatching season, which extends from the first of March to early October, a bunch of chicks is taken from the machines and immediately shipped to customers.

DOES IT PAY TO PRODUCE CLEAN MILK?

The New York Agricultural Experiment Station has been making a study of the production of milk for city supply and has found that under present financial conditions the wholesale price of city milk is not high enough to yield the average owner of a dairy a satisfactory interest upon his investment. Therefore he is compelled to supply the cheapest grade of milk that the market will accept without reducing the purchase price. The financial stimulus is the strongest force which can be enlisted in the improvement of municipal milk supplies. Milk supplies will never become better as long as the largest profit is attained by the production of dirty milk. However, they will improve when consumers are able

to buy graded milk which they are sure is true to grade. The main opportunity for cheapening production is to omit the labor and care which are necessary to the production of a clean sanitary article.

The average production per cow in the state is 2,100 quarts—much too low to give the dairyman any large profit with high cost of feed—in fact, he receives less than six per cent on his investment. His financial salvation depends upon increasing the productivity of his land to the point where it takes less than five acres to support a cow and increasing the productivity of his cows so that they will produce more than 2,100 quarts. Dairy men are human—they are not philanthropists—they can not afford to produce a higher grade of milk than the market demands and is willing to pay for.

FLAVOR OF BUTTER INJURED BY METALS.

Economic conditions make it necessary at present to hold butter in storage from the summer season, when it is plentiful, to the winter season, when it is scarce. If the butter is properly made this can be done without materially injuring its quality. It often occurs, however, that butter which has been held in storage for some months develops disagreeable flavors that greatly lessen its value. These bad flavors that will often pass unnoticed when the butter is fresh may become so serious a defect after three or four months in storage as to render the butter almost unsalable. The chemical changes which cause these bad flavors are often too small to be detected by the ordinary analytical methods of the laboratory, but the senses of smell and taste are far more delicate, and as soon as bad flavors are detected by them the value of the product is lessened.

Some metals either cause or greatly accelerate certain bad flavors in butter, although most of the experiments along this line have not included storage butters. Recently the scientific staff of the Dairy Division of the Bureau of Animal Industry in the United States Department of Agriculture has reported that the presence of very small amounts of iron in cream causes certain undesirable flavors to increase in intensity during storage. These flavors are often designated by butter experts as "metallic," "oily," or "fishy." The injurious effect of iron was found by adding iron in known quantities, varying from one to 500 parts, to a million parts of cream. The butter made from such cream was compared with that made from cream where all precautions were taken to avoid any undue contact with iron during the whole process of butter making. The butter was stored at six to 10 degrees Fahrenheit, and the quality of the butter was scored a few days after making, the samples to which iron had been added scored lower than the butter made from cream which contained no iron. This held true in most cases on the second and third scoring, which occurred at intervals varying from 20 to 187 days. The most noticeable feature was the rapid development of bad flavor in the butter containing the iron. When both the control and the experimental butter became fishy it was noticed that the control butter was the last to become so. There was a marked oily flavor present in most samples that subsequently became fishy. Only a small proportion of the iron added to the cream was found in the butter, the remainder having been taken up by the buttermilk and wash water.

Butter was also made from cream which had stood in rusty cans, and in every case this butter had a peculiar taste and was easily picked out from all other samples. The buttermilk also had a decided metallic taste.

The influence of copper on the flavor of butter was studied in a similar manner, and it was found that copper, even in small quantities, seemed to cause more marked changes of flavor in butter than did the iron, with a decided tendency toward a fishy flavor in storage. Two experiments showed very plainly the harmful effect of using poorly tinned pasteurizers, even though the cream came in contact with the copper surface for only a few seconds, for, aside from this, all other conditions were exactly alike during the complete process of butter manufacture.

This work shows that if cream is kept in rusty cans or comes in contact with iron or copper at any time during the process of butter making it may take up iron or copper from rusty cans, exposed bolt heads, or other metal parts of pasteurizers or churns, in sufficient quanti-

ties to affect the flavor of storage butter. Though there is nothing to show that the nature of the flavor is appreciably changed, it does demonstrate very clearly that the rate of development of the undesirable flavor is greatly accelerated during storage by very small quantities of either iron or copper.

THE DIRECT METHOD OF EGG-MARKETING.

There is a considerable and constantly growing portion of our egg supply which is being marketed by the direct method. As understood in this discussion, the direct method implies shipment by any one of several local agencies, including individual farmers, private companies, country merchants or co-operative associations, directly to the city retailer without the aid of jobbers, wholesalers or storage firms.

Rise of Direct Shipment.

The origin of this direct method has, in some instances, been due to the initiative of certain retail firms in the large cities, which have gone into country towns and made definite provisions for a regular supply to be furnished from week to week. More often, however, the initiative is to be traced to efforts on the part of certain agencies in the local communities themselves.

Retailers in the large cities often find it difficult to furnish their customers with a sufficient supply of fresh eggs during all seasons of the year. Some of the most annoying experiences encountered in the retail trade have arisen in just this way. Customers insist upon fresh eggs and first-class butter, and merchants understand full well that continued patronage depends to a great extent upon how well wants of this kind are satisfied.

City Retailers Seek Direct Supply.

In order to insure a steady supply at all seasons of the year, some retailers go into the country and make yearly contracts with what they regard as reliable sources of supply. The contract may be made with the owner of a high-class farm to furnish the city dealer all the eggs sold from that place. The price is usually placed at from two to five cents, in rare instances ten cents, above the market price, and therefore varies with the different seasons of the year. One disadvantage in making such arrangements with an individual farmer is that the supply furnished is usually inadequate. For this reason, large stores which handle eggs in considerable quantities find it advantageous to make contracts with country stores or with creamery associations that handle eggs. To insure uniformity in size as well as a steady supply, it is sometimes provided that the eggs must weigh not less than a minimum number of ounces per dozen. Local Communities Establish their Own Markets.

While a number of city retailers have thus sought out their own source of supply, by far the larger portion of egg-marketing according to the direct method owes its origin to the initiative of farmers or local companies. Where a farmers' organization or a private company drawing on supplies from a variety of people in the surrounding country, attempts to establish its own market among city retailers, certain difficulties are encountered that are not easy to overcome. The fact that farmers differ in tastes and habits contribute to the same supply necessarily lowers its standard as compared with what can be furnished by an individual farmer. The latter may acquire a good will which differences in the membership of a group render it impossible to duplicate. Farmers who band themselves together under the rules of an association, are able to minimize the above differences to a great extent and for this reason we find that supplies furnished from associations sell at a good margin above the market price. They are often able to command as good a return as that obtained by high-class individual farmers. Nevertheless, the top price paid for the most select trade will be found to go to certain individual farms whose highly specialized methods place them in a class of their own.

Hard to Sell Spring Supplies.

The farmers' associations or private company confronts another difficulty in the unloading of surplus supplies during each spring season. During April and May the farmers find that their shipments are very much larger than the regular retail customers in the cities are able to receive. The problem of disposing of this surplus without demoralizing the conditions of the regular market has

given rise to different experiments. Some communities have been able to send their surplus to jobbing firms and because of good will already established realize more than the regular market price on such surplus shipments. Where the quality has become known to many consumers in the city it has sometimes been possible to distribute surplus supplies among retailers other than those who are regular patrons.

Local Storage.

Still another plan has been considered recently by some of the local associations. This contemplates the local storage of surplus supplies. Thus far, however, no method has been devised sufficiently safe to encourage storage to any considerable extent. Until new light is shed on the ways and means of storing eggs, it is doubtful if local farmers' associations will find it profitable to attempt such a course.

Securing a Market.

In working up a market for local shipments, we thus have two sets of problems, first, those connected with the disposal of a regular supply throughout the year and, second, those regarding the disposal of added amounts during the season of surplus. The task of working up a regular market to be supplied throughout the year usually requires considerable time. The advice of those whose experience entitles them to be heard, invariably is to go slowly. Good market connections cannot be established in a month or a season. They must be built up gradually. So far as the care of the surplus is concerned the best experience seems to point to a temporary extension of direct city retail trade and, more often, special shipments to jobbers.

The above is in line with the series of articles run in the Michigan Farmer the first of the year under the name, "Nomid System." A discussion of the direct method of selling as here given in part, is now being sent in bulletin form over the state of Minnesota by the experiment station.

WHO MUST PAY STATE MILK LICENSE.

Will you kindly advise me if a small dairyman has to pay a license to sell milk when he lives in city limits and pays city taxes?

Emmett Co.

L. N.

Any person who produces milk and sells it to the consumer, i. e., peddles it, must pay the state license, whether he produces the milk or whether he buys the milk and then peddles it. Paying a city license or paying taxes in the city has nothing to do whatever with the state license. This state license, however, is a mere nominal sum, only \$1. It simply allows the State Dairy and Food Department to keep track of the milk dealers in the state and give them help and assistance whenever they need it.

APPLE ADVERTISING STAMPS TO BE READY AUGUST 1.

The Advertising Committee of the International Apple Shippers' Association, through its chairman, Mr. Border, has completed the design for the stamp that is to be used for raising funds for the conduct of a co-operative, country-wide apple advertising campaign. Delivery will be made in ample time to have them in the hands of the banks that will sell them before August 1.

Two series of stamps have been prepared—in denominations of one cent and two cent. The one-cent stamps will be placed by the shippers on boxes, and the two-cent stamp on barrels.

In view of the wide-spread interest evinced by apple growers in all sections of the country, and in further view of the vital necessity for advertising, that now exists, it is expected that the modest sums spent by growers on these stamps will grow into a fund that will enable the advertising committee to show markedly successful results in increasing the demand for apples.

The Equitable Mortgage and Trust Co., of Baltimore, are the trustees for the advertising fund, and the stamps will be sold by banks throughout the country. For further information address, U. Grant Border, Chairman Advertising Committee, 218 Light St., Baltimore, Md.

COLLEGES ARE HELPING FARMERS TO MARKET THEIR PRODUCTS.

The Kansas Agricultural College has successfully undertaken the task of helping farmers of that state to market their crops. This it is doing by the direct, or Nomid, system. The college locates buy-

ers and sellers and then attempts to bring them together. During the season of 1912 the institution placed 350 carloads of apples for producers of the state. Other crops marketed were hay and corn.

Other agricultural colleges of the central west have engaged in a similar line of work, and so far as we are able to learn the plan is proving satisfactory to both producers and consumers. Should a larger number of disinterested agencies undertake to bring together the buying and selling public the influence upon the middlemen would be to reduce the charges made for handling goods to the legitimate expenses required for handling and insuring the same, doing away with all exorbitant demands.

FARMERS SELL LIVE STOCK SUCCESSFULLY.

We are in possession of figures showing the business done by the co-operative live stock marketing association of Litchfield, Minn., which has been selling live stock since 1908. During the year of organization the association sold 14 car loads of stock for which it received a gross income of \$11,600; in 1910 it marketed 81 car loads for \$102,163, and in 1912 146 car loads which brought to the members \$181,545.

The growth and influence of the association has been steady and certain from the outset. While there were fewer than 100 members who took the initial step toward the merging of their live stock interests and shipping direct to packers, in 1912 over 700 farmers availed themselves of the advantages offered by the association. On the other hand, there were six men who bought live stock at this point at the time of organizing while today there is not a single independent buyer outside of the co-operative shipping association. It is estimated that in 1912 the farmers, after paying all expenses of selling and handling the stock had left from \$3,000 to \$10,000 over what they would have received from the buyers under the old system—the exact amount cannot, of course, be established because it is not known what the private buyers would have paid under circumstances similar to those existing before 1908. While this association was the only one known to exist in Minnesota in 1908 there are now over 40. Other important services resulting from the organization than the financial benefits, are: Improvement of stock, better methods of business and opening up new and better markets for live stock grown in that section of the country.

CEREAL CROPS OF THE NORTHERN HEMISPHERE.

Statistics gathered by the International Institute of Agriculture at Rome gives some comparative figures with regard to the cereal crops now growing in the northern hemisphere.

From the last bulletin issued by the above authority it appears that the wheat crop of the northern half of the world will be larger than for 1912 unless the crop of Russia changes the totals, that country not being included in the report referred to. As compared with 1912, the crop of the United States is 23 per cent higher for winter wheat and 23.3 lower for the spring wheat crop. India's 1913 crop is 33 per cent less than her 1912 crop. Italy's is nearly 11 per cent, Bulgaria's six per cent, Denmark 13 per cent, and Japan five per cent larger this year than last. The probable production of Canada has not been reported but her area of both winter and spring wheat exceeds that of 1912.

The same authority indicates that the oat yield of the United States will be 77.8 per cent of the yield for 1912; that of Denmark will be 100.3 per cent of the yield for the former year and in Bulgaria it will be 114.3 per cent of the preceding year. With the exception of Hungary, the area sown this year will compare very closely with that of 1912. In the country excepted the increased acreage amounts to more than 22 per cent above the 1912 crop.

The figures on the outlook for rye in the present year are not comprehensive. However, they indicate a yield practically the same as the amount produced in 1912. Bulgaria has a crop ranking 11 per cent above that of 1912 and Denmark one averaging about five per cent less, according to the above authority. The conditions of the crop growing in the United States is one point above the average yield. The area sown for this season compares very closely with that of the previous year.

WANT TO BUY Registered Holstein heifer calves of good breeding. W. H. H. WERTZ, Wooster, Ohio.

BREEDERS' DIRECTORY.

CATTLE.

Aberdeen-Angus.

Herd, consisting of Trojan Ericas, Blackbirds and Prides, only, is headed by Egerton W. the GRAND CHAMPION bull at the State, West Michigan and Bay City Fairs of 1912 and the sire of winners at these Fairs and at THE INTERNATIONAL, Chicago, of 1912. WOODCOTE STOCK FARM, Ionia, Mich.

GUERNSEY BULL CALVES, YORKSHIRE PIGS. Good Stock.

HICKS GUERNSEY FARM, Saginaw, W. S., Mich.

Guernsey Bull Calf—Rich in A. R. breeding. Fit to head any herd. A. Geo Dandy. G. A. WIGENT, Watervliet, Mich.

GUERNSEYS—Reg. Tuberculin Tested. Windsor Farm, Watervliet, Mich. J. K. BLATCHFORD, Auditorium Tower, Chicago, Ill.

I have 2 Reg. Guernsey bulls left. Ready for service, the very best breeding, cheap if taken soon. Guarantee satisfaction. John Eells, R. 30, Holland, Mich.

HEREFORD BULLS FOR SALE Also Poland China Hogs. ALLEN BROS., Paw Paw, Michigan.

CHOICE Bull Calves from A. R. O. dams. Sired by our herd sire whose dam and sire's dam each made over 30 lbs. in 7 days. E. R. CORNELL, Howell, Mich.

A FEW CHOICE Holstein Friesian Bull Calves for Sale. A. R. O. Stock. GREGORY & BORDEN, Howell, Michigan.

HOLSTEIN BULLS—well bred, at reasonable prices. Our herd sire whose dam and sire's dam each made over 30 lbs. in 7 days. W. B. JONES, Oak Grove, Mich.

"Top-Notch" Holsteins.

Choice bull calves from 2 to 8 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices.

McPHERSON FARMS CO., Howell, Michigan.

Purebred Registered **HOLSTEIN CATTLE** The Greatest Dairy Breed Send for FREE Illustrated Booklets Holstein-Friesian, Assn., Box 164, Brattleboro, Vt.

IMPORTANT TO HOLSTEIN BREEDERS.

If there is a breeder or a community of breeders in Michigan in need of one of the greatest BULLS of the GREATEST breed of Dairy cattle in the world, I wish to call your attention to the fact that I am offering FOR SALE, Pledge Duke De Kol Welsrijp No. 4367. He is a great breeder, a grand individual. Bred right, and guaranteed a sure breeder, sound and right in every respect. His dam is Nancy Pledge Princess. Butter in 7 days, 32.39 lbs.; Milk in 7 days, 716.00 lbs.; Butter in 30 days, 132.31 lbs.; Milk in 30 days, 3057.70 lbs.; Come and see him and see his heifers, and be convinced of his worth. L. E. CONNELL, Fayette, Ohio.

Bigelow's Holstein Farms Breedsville, Mich.

Have for sale several fine young bulls out of cows with high official butter and milk records.

Send for circular.

HOLSTEIN COWS FOR SALE

Bred to a bull that is more than a half brother to the World record cow Benosine Belle De Kol. This is an opportunity for some one to start in Registered stock at a moderate cost. ED. S. LEWIS, Marshall, Michigan.

THIS HOLSTEIN BULL

was sired by best son of PONTIAC BUTTERBOY. Dam has official record of 24 lbs. in 7 days, 60 lbs. milk a day. Price \$300. C. D. WOODBURY, Lansing, Mich.

REGISTERED HOLSTEINS. HOBART W. FAY, Mason, Mich. Farm right in the city, only few minutes from Jackson or Lansing. Electric cars from both cities every hour.

HOLSTEIN BULLS.

3 to 8 months old, \$75 to \$300. Don't buy until you get our pedigrees and prices. LONG BEACH FARMS, Augusta, Kalamazoo Co., Mich.

For Sale—2-yr.-old Jersey Bull—Dam's 5-yr.-old record Sires dam's record—12997 lbs. milk; 600 lbs. fat, 706 lbs. butter. 2-yr.-old full sister's record—9840 lbs. milk, 435 lbs. fat, 513 lbs. butter. All authenticated, kind, sound, sure. Waterman & Waterman, Ann Arbor, Mich.

Noten Farm, Grass Lake, Mich. A few young Jersey bulls sired by Jubilee of Sylvan 56½% the blood of Jubilee of Bois Arc.

They Keep It Up There are some cattle that give more milk when they are fresh than a Jersey, but there isn't any breed that gives as rich milk as

The Jersey

at as small feeding cost, nor is there any breed of cattle that will keep it up like Jerseys will, year in and year out. That's why you ought to buy Jerseys to increase your herd's efficiency. Send for Jersey facts.

AMERICAN JERSEY CATTLE CLUB 224 W. 23d St., New York

Lillie Farmstead Jerseys

(Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and cows out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

Jerseys—Bulls ready for service, bred for production. Also cows and heifers. Brookwater Farm. R. F. D. No. 1, Ann Arbor, Mich.

FOR SALE—Hope Farm Jersey Bulls, from prize winning stock. GEO. C. BORCK, Grand Haven, Michigan.

For Sale—Registered Jersey Cattle, tuberculin tested; ed. bulls and heifers; heifer and heifer calves; cows with Register of Merit and Cow Testing Association records. IRVIN FOX, Allegan, Mich.

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

DAIRY BRED SHORTHORNS—Bates bred bull 7-mo. old for sale. Price \$100. J. B. HUMMEL, Mason, Michigan.

Dairy Shorthorns—Large Cattle—Heavy Milkers. Milk Records of all cows kept. No stock for sale at present. W. W. KNAPP, R. No. 4, Watervliet, Mich.

SHEEP.

IT PAYS TO BUY THOROUGHbred SHEEP OF PARSONS. "the sheep man of the east." I sell and ship everywhere and pay express charges. I will start one man in each twp. Write for club offer and descriptive price list. Shropshires, Rambouillet, Polled-Delaines and PARSONS OXFORDS. R. 1. Grand Ledge, Michigan.

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2½ miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. 000K.

SHROPSHIRE & DUROCS KOPE-KON FARM, Kinderhook, Michigan.

HOGS.

Durocs & Victorias—A Desirable Bunch of Sows of Either Breed due April and May. M. T. Story, R. R. 48 Lowell, Mich. City Phone 55.

BERKSHIRES Choice spring boars and gilts, priced to move quick. Farmers stock. ELMHURST STOCK FARM, Almont, Mich.

BERKSHIRE PIGS FOR SALE—With or without mothers. Ternes Stock Farm, 1730 Michigan Ave., Detroit, Mich.

Quick Maturing Berkshires—Best breeding; best type. Satisfaction guaranteed or money refunded. C. S. BARTLETT, Pontiac, Mich.

A Yearling Sow—bred for July farrowing, also a choice lot of Spring Pigs for sale. Either sex. A. A. PATULLO, R. No. 1 Deckerville, Mich.

O. I. C.—Big growthy type, last fall gilts and this spring farrow to offer. Very good stock. Scott No. 1 head of herd. Farm ½ mile west of depot, OTTO B. SCHULZE, Nashville, Mich.

O. I. C's—A FEW BRED SOWS FOR SEPTEMBER FAREW. GEO. P. ANDREWS, Danville, Ingham Co., Mich.

THIS O.I.C. SOW WEIGHED 932 LBS. AT 23 MONTHS OLD IONIA GIRL

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

O. I. C's—all sold. Orders booked for April and May pigs of the choicest breeding. C. J. THOMPSON, Rockford, Michigan.

O. I. C's—Bred sows, March pigs pairs and trios. Buff Rock Eggs \$150 per 15. FRED NICKEL R. 1, Monroe, Michigan.

O. I. C's—All ages, growthy and large. Males ready, 100 to select from. Attractive prices on young stock. H. H. JUMP, Munith, Mich.

O. I. C. SWINE—I am offering 200-lb. gilts, bred, due to farrow the latter part of August and fore part of September. All who are interested write me. A. J. GORDON, R. No. 2, Dorris, Mich.

DUROO Jersey herd boar and brood sow—\$35 each, if taken at once. Also May pigs \$8 each while they last. Satisfaction Guaranteed. Mrs. F. B. Cook, Stanwood, Mich.

DUROC-JERSEYS—Fall and Spring boars from prize-winning strains. Sows all ages. SPECIAL BARGAIN in summer pigs. Brookwater Farm, R. F. D. No. 1, Ann Arbor, Mich.

DUROC JERSEYS—Fall Gilts bred or open. Spring pigs pairs not akin. F. J. DRODT, R. No. 1, Monroe, Michigan.

Duroc Jerseys For Sale—Three fall boars, also spring pigs, either sex, of finest breeding and individual quality. John McNeill, Station A, R. 4, Bay City, Mich.

Duroc Jerseys—Nothing But Spring Pigs For Sale. CAREY U. EDMONDS, Hastings, Michigan.

DUROC JERSEY SPRING PIGS of either sex for sale. Pairs not akin, also 2 Reg. Percheron mares, 2 years old, both grays. M. A. BRAY, Okemos, Mich.

POLAND CHINAS—Both Western and Home Bred. Either sex, all ages. Prices right. W. J. HAGELSHAW, Augusta, Mich.

Big Type Poland China Pigs at close prices. Eggs Rocks, \$1 per 15. ROBERT NEVE, Pierson, Mich.

POLAND CHINAS—Either sex, all ages. Something good at a low price. F. D. LONG, R. No. 8, Grand Rapids, Michigan.

LARGE TYPE P. C. FALL PIGS all sold. Have the greatest bunch of spring pigs I ever raised. Eight sows farrowed 86. Come or write. Expenses paid if not satisfied. Free livery from Parma. W. E. LIVINGSTON, Parma, Mich.

P. C. BOARS AND SOWS—large type, sired by Expansion. A. A. WOOD & SON, Sallao, Michigan.

350 BIG TYPE MULE FOOT HOGS—All ages for sale. Prolific and hardy. Best bred for Michigan. Also Ponies. J. DUNLAP, Box M, Williamsport, Ohio.

LARGE Yorkshires—Choice breeding stock, all ages, not akin, from State Fair prize-winners. Pedigrees furnished. W. O. COOK, R. 42 Box 22, Ada, Mich.

YORKSHIRE Swine—We have some nice spring pigs now ready for sale. Write for description and prices. OSTRANDER BROS., Morley, Mich.

Lillie Farmstead YORKSHIRES Spring bred gilts all sold. Gilts bred for next August farrow. September pigs either sex, pairs and trios not akin. Orders booked for spring pigs. COLON C. LILLIE, Coopersville, Mich.

DOGS.

HOUNDS FOR HUNTING Fox, Coon, Skunk FERRETS and Rabbits. W. E. LECKY, Holmesville, Ohio. Send 2c stamp.

FOX AND WOLF HOUNDS of the best English strains in America; 40 years experience in breeding these fine hounds for my own sport. I now offer them for sale. Send stamp for Catalogue. T. E. HUBBETH, Shelby, Jackson Co., Mo.

Markets.

GRAINS AND SEEDS.

July 9, 1913.

Wheat.—This cereal rules lower. For two weeks prices have gradually declined without a single reaction. The depressing influence comes very largely from the crop conditions of this country. The winter wheat has matured well and rains have helped the spring wheat crop in many sections. Abroad the news has been more favorable to the bull side of the market. Russia is complaining of unfavorable weather, as is also France, and in the Canadian Northwest a firmer feeling prevails because the output there will probably run considerably below that of a year ago. European countries are also anxious on account of the Balkan war trouble which may spread at any time and create a general demand for the cereal by providing against emergencies. In the United States farmers are putting their new crop on the market in those sections where threshing is in progress and these receipts have been a depressing feature. Millers report a quiet trade for flour. One year ago the price for No. 2 red wheat on the local market was \$1.06½ per bu. Quotations for the week are as follows:

	No. 2 Red.	No. 1 White.	July.	Sept.
Thursday	1.00½	99¼	91	92½
Friday	.....	.....	.....	.....
Saturday	.....	.....	.....	.....
Monday	98½	97½	89½	91
Tuesday	98	97	88¾	90¼
Wednesday	98	97	90¼	94¼

Chicago, (July 8).—No. 1 red wheat, 90c; No. 2 red, 88½c; July, 88c; Sept., 88½c; Dec., 92½c.

Corn.—The change in corn values amounts to a fractional decline. This cereal occupies a stronger position than wheat as may be observed through its failure to follow the rapid decline in the other cereal. The consumption of corn has been large, which, together with the reports of damage from lack of moisture in many important corn growing sections, keeps values steady in the face of a declining wheat deal. One year ago the price for No. 3 corn was 72½c per bu. Local quotations for the past week are:

	No. 3 Corn.	No. 3 Yellow.
Thursday	61½	63½
Friday	.....	.....
Saturday	.....	.....
Monday	61	63
Tuesday	61	63
Wednesday	61	63

Chicago, (July 8).—No. 2 corn, 61½c; No. 2 yellow, 62c; July, 60½c; Sept., 61½c; Dec., 58½c per bu.

Oats.—This cereal held steady until Tuesday, when a fractional decline affected all grades. Although crop advices from many sections indicate a good yield, other localities report the growing plant in poor condition. Consumption seems to be fully up to normal. One year ago the local price for standard oats was 53c per bu. Quotations for the past week are:

	No. 3 Standard.	White.
Thursday	44	43
Friday	.....	.....
Saturday	.....	.....
Monday	44	43
Tuesday	43½	42½
Wednesday	44	43

Chicago, (July 8).—No. 2 oats, 38½c; standard, 41½c; July, 40½c; Sept., 41½c; Dec., 43½c per bu.

Beans.—Former nominal quotations are still published here, with the trade in a bearish condition, supplies being ample and demand ordinary. The estimated acreage of the crop in Michigan for the present year is 424,230 acres. The nominal quotations for immediate and prompt shipment are \$2.05; July, \$2.10 per bu.

Chicago, (July 8).—At this point bean values have declined the past week. All varieties suffered from the cut except white kidneys, which are higher. Pea beans, hand-picked, fancy, are quoted at \$2.25 per bu; choice, \$2.15@2.20; prime, \$1.90@2.05; red kidneys, \$2.10@2.20; white kidneys, \$3 per bu.

Rye.—On the local market prices are unchanged at 64c per bu. for cash No. 2, and the market is steady with very few offerings. In Chicago the margin is narrowed, with the higher level unchanged from last week, No. 2 being quoted at 62c@62½c per bu.

Barley.—Lower values prevail in all important markets. At Chicago the range is from 48c@61c per bu. and at Milwaukee from 55c@63c, according to grade.

Clover Seed.—More interest is being manifested in the seed trade and the local market has been bidding for future deliveries with some contracts affected. October seed is quoted at \$8.20 and alsike at \$9.25 per bu. At Toledo prime October is up 5c and quoted at \$8.25 per bu., while December is steady at \$8.20. Prime October alsike has advanced a half dollar to \$9.40 per bu., while December is up 45c or at \$9.45 per bu.

Timothy Seed.—A better market prevails in this product, prime cash being up to \$2.55 and September \$2.60 per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.70; second, \$5.20; straight, \$5; spring patent, \$5.10; rye flour, \$4.60 per bbl.

Hay.—Values steady. Carlots on the track at Detroit are: No. 1 timothy, \$14@14.50; No. 2, \$11@12; light mixed, \$12.50@13; No. 1 mixed, \$11@12.

Chicago.—Market quiet at lower values.

Choice timothy, \$14.50@15 per ton; No. 1 \$13.50@14; No. 2, \$11@12; No. 3 and clover mixed, \$8@11; clover, \$8@12; alfalfa, \$14@17.

DAIRY AND POULTRY PRODUCTS.

Butter.—Butter generally showed little activity last week due to the holiday and the extreme heat. Elgin was steady at this week's opening and the local market shows no change from last week. Detroit jobbing prices as follows: Fancy creamery, 26c; firsts, 24½c; dairy, 21c; packing stock, 19c per lb.

Elgin.—Market steady at 26½c. Chicago.—Market quiet under liberal supplies, a very small proportion of which show extra quality. The better grades, however, are quoted a little higher. Quotations are: Extra creamery, 26½c; extra firsts, 25½c@26c; firsts, 24½c@25c; seconds, 23½c@24c; dairy extras, 25c; firsts, 24c; seconds, 22c; packing stock, 12@21c as to quality.

New York.—Values here show a better recovery than at most other points, this applying especially to the better grades of both creamery and dairy. Quotations: Creamery extras, 27½c@28c; firsts, 26@27c; seconds, 24½c@25½c; state dairy, finest, 26@27c; good to prime, 24@25½c; common to fair, 22@23½c; packing 20@21c as to quality.

Eggs.—The local market remains unchanged, with extra quality stock commanding a premium. Current offerings, candled, being quoted at 17½c per doz.

Chicago.—This market is receiving great quantities of mediocre stock and quotations on miscellaneous offerings have widened very perceptibly. Values on the whole are lower this week. Miscellaneous receipts, cases included, are quoted at 10@15½c; do., cases returned, 10@15c; ordinary firsts, 15½c@16c; firsts, 17@17½c; storage packed, firsts, 17½c per dozen.

New York.—Good eggs in this market are commanding slightly better prices than a week ago. Fresh gathered extras, 23@25c; western gathered, whites, 20@25c per dozen.

Poultry.—Offerings continue liberal but the demand at this week's opening was sufficient to bring a fair advance in chickens. Quotations: Live.—Broilers, 25@26c; hens, 16@16½c; No. 2 hens, 12@13c; old roosters, 11@12c; turkeys, 17@18c; geese, 12@13c; ducks, 15@16c per lb.

Chicago.—Receipts liberal and market in fair condition. Fowls are fractionally higher while springs are quoted 3c lower. Quotations on live are: Turkeys, good weight, 17c; others, 12c; fowls, good, 14½c; spring chickens, 22c; ducks, 11@12c; geese, 7@9c; guinea hens, \$4 per dozen.

Cheese.—Steady. Wholesale lots, Michigan flats, 14¼@14½c; New York flats, 15½c@16c; brick cream, 14¼@15c; Limburger, 14½@15½c.

Veal.—Little doing; quotations largely nominal. Fancy, 13½@14c; common, 10@11c.

Chicago.—This market is overloaded with stale stocks which it seems nearly impossible to move. The few fresh, sound calves on hand at this week's opening brought 10@13c per lb.

FRUITS AND VEGETABLES.

Apples.—New apples are selling here at \$1.40@1.50 per box, and \$4@4.50 per bbl. Old apples are gone.

Gooseberries.—\$2@2.50 per bu.

Currents.—Ordinary, \$2.50@3; cherry, \$3.50@4 per bu.

Raspberries.—Firm with offerings fair. Red, \$5.50@6 per 24-qt. case; black, \$1.50 per 16-qt. case.

Cherries.—Good supply at \$3.25@3.50 per bushel.

Potatoes.—Market is easy with prices for the new crop ruling lower than last week, they being \$2.25@2.35 per bbl.

WOOL.

Boston.—Wool sales are increasing. The total transfers for last week totaled more than 1,500,000 lbs. Dealers are taking a more optimistic view of the deal. Farmers who held out earlier in the season have promise, in most instances, of getting what they demanded. Medium fleeces appear to have about as strong a position in the market as any other kind of wool. Among the leading quotations here are: Michigan fleeces—Fine unwashed, 19@20c; delaine unwashed, 20@21c; ½-blood unwashed, 22@23c; ¾-blood unwashed, 23@24c.

GRAND RAPIDS.

The egg market is off this week and jobbers are paying the country trade 16½c. Dairy butter is worth 22c. Hay is a short crop in this section and new hay is bringing \$14@16, old \$17@20. The strawberry season is over and the few offered are worth around \$3 per crate. Red and black raspberries are drying up for want of rain and are selling around \$2.50 per crate, the black caps ranging down to \$2. Cherries were in good demand on Tuesday morning's market and sold for \$1.20@1.50; sweets at \$2.25. Currants are bringing \$1.25; gooseberries \$1. First offerings of home-grown potatoes sold at \$1.20 per bu. New peas are worth \$1. Dressed hogs are quoted at 10½@11c; fowls, live, 12½@13c; broilers, 20@22c.

DETROIT RETAIL QUOTATIONS.

Eastern Market.—Produce was sold out early Tuesday for there were comparatively few offerings to supply the demands of the large number of buyers. Strawberries and old potatoes are gone. The variety of products is narrow. Lettuce is bringing 25c per bu; peas, \$1.00; radishes plentiful at 3 bunches for 10c;

THE LIVE STOCK MARKETS.

Buffalo.

July 7, 1913.

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

Receipts of stock here today as follows: Cattle, 120 cars; hogs, 65 double decks; sheep and lambs, 10 double decks; calves 11 head.

With 120 cars of cattle on our market here today and only 10,000 reported in Chicago, our market here was about steady on all grades. The indications were at the opening of the market for some improvement in the best heavy cattle, but when the market steadied down and offerings changed hands, prices ruled about steady, and at the close there were several loads of heavy cattle unsold. Other grades closed steady and about all sold. Milkers and springers, the best grades, were from \$3@5 per head higher, while the common kind were about steady.

We quote: Best 1350 to 1500-lb. steers dry-fed, \$8.75@9; good to prime 1200 to 1300-lb. do., \$8.40@8.65; good to prime 1100 to 1200-lb. do., \$8.15@8.40; coarse and plain weighty steers, \$7.65@7.90; good to choice handy dry-fed steers, \$8@8.25; good to choice handy steers, grassy kind, \$7.40@7.60; medium butcher steers, grassy kind, \$7@7.25; dry-fed steers and heifers mixed, \$7.80@8; light common grassy steers and heifers, \$6.50@6.75; best fat cows, dry-fed, \$6.50@7; do., grassy, \$5.50@6; good butcher cows, \$5.50@6; light do \$4.50@5; trimmers, \$4@4.25; best fat heifers, dry-fed, \$7.75@8; medium butcher heifers, grassy, \$6.50@7; light common grassy heifers, \$6@6.25; stock heifers, \$5@5.50; best feeding steers, dehorned, \$7@7.25; light and common stockers, \$6@6.50; best butcher bulls, \$6.75@7.25; bologna bulls, \$6@6.50; stock bulls, \$5.25@5.50; best milkers and springers, \$6.50@8; common kind do., \$3.50@4.50.

Receipts of hogs today were considerably lighter for a Monday than for some time past; about 65 double decks on sale. Market was slow at the opening; packers buying their grades at \$9.40 generally, while shippers paid up to \$9.45 for light mixed, and \$9.50 for pigs and yorkers. Roughs sold from \$7.50@8.25; stags, \$6.50@7.50; market closed steady and about everything sold.

The sheep and lamb market was active today; prices a quarter higher on sheep, and a half higher on lambs; choice handy yearling lambs selling at \$6.75@7; spring lambs, \$9@9.15; few fancy at \$9.50; look for little lower prices the last of the week.

We quote: Choice spring lambs, \$9@9.25; cull to fair do., \$6.50@8.50; yearling lambs, \$6.50@7; bucks, \$3@3.50; wethers, \$5.25@5.50; handy ewes, \$4.75@5; heavy ewes, \$3.75@4; cull sheep, \$2.50@3.50; veals, choice to extra, \$10.75@11; fair to good, \$9@10.50; heavy calves, \$4.50@6.

Chicago.

July 7, 1913.

Received today 10,000 35,000 16,000
Same day last year .. 18,905 29,912 16,993
Received last week .. 31,514 90,162 60,985
Same week last year .. 35,057 109,141 66,195

This is a Monday of light supplies of cattle and sheep, while the run of hogs falls much below expectations, being light to begin the week. Cattle prices are generally 15@25c higher, with a sale of some choice beefs at \$8.95. Hogs are up 10@15c, with plenty of sales at the full advance of 15c, there being a strong demand at \$8.60@9.20. Prices are the highest since April. Hogs marketed last week averaged 242 lbs., compared with 237 lbs. a year ago, 229 lbs. two years ago, and 240 lbs. three years ago. Prime pigs are up to \$8.90. The sheep market is booming, with large flocks of Idaho range lambs taken at \$8.25, a jump of 50c, but at a late hour no native lambs had been sold above \$8. The best light yearling wethers brought \$6.75, and some light ewes sold at \$4.65.

Cattle were decidedly in the dumps last week, the general demand being about as poor as could well be imagined, for it was hot weather, and beef consumption was at its lowest everywhere. The receipts were reduced to extremely small proportions, for country shippers knew from experience what to expect in the way of demand, but small as they were, prices pursued a downward course and averaged all of 25c lower at the close than a week ago. The bulk of the beef steers crossed the scales at \$7.60@8.60, the commoner class of light grassy steers going at \$7@7.75, while the best beefs of strong weight sold for \$8.40@8.85. For medium class steers buyers paid \$7.80@8.10, and a good class sold at \$8.15@8.35, while medium to prime little yearlings sold at \$7.75@8.65. The fact that there were two holidays in the week when absolutely no business was transacted in cattle, hogs and sheep made a big difference in the demand for all sorts of cattle, with the slaughtering plants all closed from Thursday night to Monday morning, for it was decided some time ago by the Chicago Live Stock Exchange to observe Saturday as well as Friday. Butchering cattle sold more readily than beef steers, as usual, but even these cattle shared in the decline in prices, cows and heifers going at \$4.80@8.25, and a consignment of 108 head of 770-lb. yearling heifers, which looked like the kind that sold during the previous week at \$8.50, went to Armour & Co. at \$8.25. Cutters sold at \$4.25@4.75, canners at \$3.25@4.20 and bulls at \$4.75@7.25. Very little business was accomplished in stockers and feeders, neither offerings nor demand amounting to much, with prices averaging 15@25c lower. Stockers sold at \$5.50@7.85 and heavy feeders at \$6.80@8, very few feeders going near the

top figure. Stock heifers sold moderately at \$5.75@6.75 and stock calves at \$7@8. Calves had a good outlet at \$8.75@9.60 for good light vealers, with coarse heavy calves selling at \$5 and upwards. Milk-ers and springers were extremely dull at \$50@100 per head.

Hogs made a great record last week by selling at much the highest price touched for weeks, the greatly lessened receipts being too small for the requirements of the trade. When the week closed hogs sold at \$8.50@9.05 for rough, heavy packing lots to prime selected light and butcher lots, while pigs brought \$7.50@8.85. Provisions have been following the raw material in its upward flight, with a good cash demand and much smaller supplies than in other years, the stocks held in Chicago warehouses the first of July aggregating but 119,414,084 lbs., compared with 108,783,521 lbs. a month earlier and 163,126,026 lbs. a year ago. There was a much smaller increase in such holdings during June than is usual in that month, and packers are extremely desirous of increasing their stocks. The proportion of big, heavy sows that have been fattened for the market after weaning their pigs is increasing gradually, and these sell at a marked discount from prices paid for more desirable offerings. As the season advances these may be expected to sell at a greater discount, this being the common experience of former years in the market. Stags sold at the close at \$8.90@9.35, boars at \$8@8.45 and throw-out packing sows at \$8@8.45. Higher prices for hogs later on are expected.

Sheep and lambs reacted after Monday last week from their heavy decline in prices, as owners stopped their previous liberal shipments, and sellers were in a position to dictate terms. When the week closed spring lambs sold on a basis of \$5.25@7.75, with the season for marketing Idaho range springs opened and fair sales at \$5.75@7.75 and a ready outlet for feeder lots at \$5.75@6.25. Native ewes brought \$2.50@4.50, and bucks brought \$3@3.50, while breeding ewes went at \$4@4.75 in a small way. Oregon ranges furnished fair numbers of wethers at \$3.50@4.95, as well as some yearling wethers at \$5@5.35, the \$5 lots selling for feeders. Chicago packing plants continued to receive liberal supplies of southern spring lambs consigned to them direct from their special buyers stationed at Louisville, and this feature will be a factor in the market for some time yet. While spring lambs have rallied in values, they are still much lower than in several recent years. The course of the market from now on will depend upon whether owners ship in their holdings conservatively or not.

MICHIGAN CROP REPORT.

Wheat.—The estimated average yield in the state is 14.63, in the southern counties 14.28, in the central counties 14.90, in the northern counties, 14.63, and in the upper peninsula 17.62 bushels per acre.

Rye.—The average estimated yield of rye in the state is 13.81, in the southern counties 13.89, in the central counties 12.82, in the northern counties 13.64 and in the upper peninsula 20.80 bu. per acre.

Corn.—The condition of corn in the state is 87, in the southern counties and upper peninsula 84, in the central counties 90 and in the northern counties 91. One year ago the condition of corn in the state was 68.

Buckwheat.—The acreage of buckwheat sown or to be sown as compared with last year is 89 in the state, 88 in the southern and northern counties, 96 in the central counties and 77 in the upper peninsula.

Beans.—The acreage of beans planted or to be planted as compared with last year is 96 in the state, 94 in the southern counties, 103 in the central counties, 93 in the northern counties and 98 in the upper peninsula. The condition of beans compared with an average is 91 in the state, 87 in the southern counties, 94 in the central counties, 92 in the northern counties and 99 in the upper peninsula.

Potatoes.—The condition of potatoes in the state is 88, in the southern counties 84, in the central counties 90, in the northern counties 93 and in the upper peninsula 96.

Sugar Beets.—The condition of sugar beets is 90 in the state and central counties, 88 in the southern counties, 93 in the northern counties and 91 in the upper peninsula.

Clover.—The condition of clover sown this year as compared with an average is 77 in the state, 70 in the southern counties, 76 in the central counties, 88 in the northern counties and 105 in the upper peninsula.

Hay and Forage.—The acreage of hay and forage that will be harvested as compared with last year is 88 in the state and southern counties, 85 in the central counties, 86 in the northern counties and 98 in the upper peninsula.

Peas.—The acreage of peas sown, as compared with last year is 89 in the state, 91 in the southern counties, 87 in the central counties, 86 in the northern counties and 92 in the upper peninsula.

Fruit.—The prospect for a crop of peaches in the counties included in the Michigan Fruit belt is as follows:

Allegan	36
Berrien	43
Calhoun	45
Kent	59
Ottawa	38
Van Buren	27
Muskegon	51
Newaygo	90
Oceana	65
Benzie	60
Leelanau	65
Manistee	70
Mason	55
Average for Michigan Fruit Belt	54
Average for Michigan Fruit Belt, 1912	18

THIS IS THE FIRST 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 3, 1913.

Cattle.

Receipts, 785. Market active at Wednesday's and last week's prices on all grades.

We quote: Best dry-fed steers and heifers, \$8@8.25; steers and heifers, 1000 to 1200, \$7.50@7.75; do. 800 to 1000, \$7@7.25; grass steers and heifers that are fat, 800 to 1000, \$6@7; do. 500 to 700, \$5@6; choice fat cows, \$6.25@6.50; good fat cows, \$5.75@6; common cows, \$4.75@5; canners, \$3.75@4.25; choice heavy bulls, \$6.50; fair to good bolognas, bulls, \$6@6.25; choice feeding steers, 800 to 1000, \$6.75@7; fair do., 800 to 1000, \$6@6.50; choice stockers, 500 to 700, \$6.50@7; fair do., 500 to 700, \$5.50@6; milkers, large, young, medium age, \$5@7; common milkers, \$3.50@4.50.

Haley & M. sold Newton B. Co. 8 heifers av 810 at \$7; to Boyer 5 stockers av 500 at \$7; to Bresnahan 1 cow weighing 1070 at \$5.50, 1 do weighing 1140 at \$5.25, 7 heifers av 667 at \$5.70; to Breitenbeck 5 cows av 1012 at \$4.85; to Bower 23 stockers av 475 at \$5.75; to Schuman 3 butchers av 920 at \$6.75, 8 cows av 1046 at \$5.20; to Breitenbeck 11 butchers av 922 at \$7.35; to Stahlem 2 do av 895 at \$5.60, 1 bull weighing 620 at \$5.50; to Rattkowsky 1 do weighing 1000 at \$5.50, 1 do weighing 560 at \$5, 2 cows av 980 at \$5.10; to Bresnahan 4 heifers av 735 at \$6; to Land 11 feeders av 710 at \$6.50; to Mich. B. Co. 8 heifers av 715 at \$6; to Bresnahan 6 butchers av 1120 at \$5.85, 6 do av 970 at \$7.35; to Mason B. Co. 2 cows av 950 at \$6, 2 do av 1040 at \$6.25, 2 do av 775 at \$5.50, 2 do av 860 at \$5, 2 heifers av 525 at \$6.25, 3 steers av 887 at \$7.35, 5 do av 790 at \$5.50, 1 bull weighing 650 at \$5.80, 5 steers av 926 at \$7.15, 2 do av 690 at \$6.10.

Sandall sold Kendall 18 stockers av 535 at \$6.25.
Same sold Kull 8 butchers av 794 at \$6.75.

Bishop, B. & H. sold Hammond, S. & Co. 3 cows av 917 at \$6, 1 bull weighing 1250 at \$6.25, 4 do av 1100 at \$6.35; to Parker, W. & Co. 5 do av 1200 at \$6.25, 3 do av 1050 at \$6.25, 2 cows av 1065 at \$5, 2 do av 1000 at \$5.50, 2 do av 1095 at \$5.50, 1 do weighing 1120 at \$6, 1 bull weighing 730 at \$5.50, 2 canners av 825 at \$4.25, 1 cow weighing 1000 at \$5, 8 cows av 962 at \$5; to Bresnahan 2 bulls av 470 at \$4.50, 7 butchers av 644 at \$5.50; to Boyer 1 heifer weighing 480 at \$5.50, 3 bulls av 457 at \$5; to Kull 2 butchers av 660 at \$6, 9 do av 820 at \$6.75; to Norey 13 cows av 740 at \$5.50; to Parker, W. & Co. 2 bulls av 870 at \$6; to Kamman B. Co. 13 steers av 905 at \$7.50; to Hammond, S. & Co. 1 bull weighing 1150 at \$6.25; to Schumaker 5 stockers av 740 at \$6.10, 1 bull weighing 680 at \$5; to Kamman B. Co. 3 butchers av 971 at \$7, 3 cows av 1150 at \$6; to Cooke 10 steers av 954 at \$7.25; to Kamman B. Co. 7 butchers av 764 at \$6.50; to Parker, W. & Co. 2 cows av 960 at \$4; to Marx 1 steer weighing 880 at \$6.50, 3 do av 777 at \$6; to Breitenbeck 3 steers av 853 at \$5; to Bresnahan 3 heifers av 647 at \$5.50; to Mich. B. Co. 1 cow weighing 1180 at \$5, 1 do weighing 1220 at \$6, 4 do av 1087 at \$5.50; to Sullivan P. Co. 3 cows av 1227 at \$6; to Hammond, S. & Co. 4 heifers av 810 at \$7.

Roe Com. Co. sold Kull 1 cow weighing 740 at \$4.75, 2 do av 800 at \$5.50, 5 do av 888 at \$5.35, 2 heifers av 685 at \$6.50, 2 cows av 900 at \$6; to Kendall 7 stockers av 671 at \$6.25; to Goodwin 3 cows av 943 at \$5, 1 do weighing 1000 at \$4.25; to Newton B. Co. 4 heifers av 760 at \$6.50; to Goose 9 butchers av 501 at \$5.25; to Nancy 3 cows av 863 at \$4.25; to Kamman B. Co. 21 steers av 828 at \$6.60, 1 do weighing 840 at \$7.25; to Bresnahan 2 canners av 870 at \$3.50, 4 do av 705 at \$4, 9 butchers av 566 at \$5.75; to Sullivan P. Co. 3 do av 740 at \$5.75, 1 cow weighing 1180 at \$4.25; to Mich. B. Co. 11 steers av 1275 at \$8, 1 bull weighing 1700 at \$6.75, 10 steers av 1146 at \$8, 2 do av 915 at \$7; to Nancy 7 bulls av 601 at \$5.25; to Newton B. Co. 2 cows av 875 at \$4, 4 do av 990 at \$6.25; to Sullivan P. Co. 1 bull weighing 1020 at \$6.25, 1 cow weighing 960 at \$5, 2 steers av 940 at \$7.25, 2 cows av 1245 at \$6.10.

Spicer & R. sold Boyer 5 stockers av 454 at \$5.75; to Kull 2 cows av 910 at \$5.50; to Hammond, S. & Co. 3 butchers av 710 at \$6.60, 1 bull weighing 1120 at \$6.60, 4 butchers av 1005 at \$7, 1 heifer weighing 730 at \$6, 3 steers av 970 at \$7, 2 do av 570 at \$6; to Bray 1 do weighing 660 at \$6; to Nancy 6 cows av 861 at \$4.25; to Sullivan P. Co. 7 butchers av 764 at \$6, 3 cows av 880 at \$4.75, 6 do av 970 at \$5.25; to Boyer 7 stockers av 367 at \$5.75, 1 bull weighing 750 at \$5.50.

Veal Calves.

Receipts, 856. Market 25c lower than Wednesday. Best, \$10; others, \$6@9.50.
Spicer & R. sold Ronick 11 av 145 at \$9.15; to Goose 21 av 150 at \$9.30; to Burnstine 1 weighing 110 at \$8, 3 av 160 at \$10, 4 av 150 at \$10, 15 av 155 at \$10; to Applebaum 7 av 250 at \$6.50, 10 av 128 at \$9; to Parker, W. & Co. 1 weighing 270 at \$7, 8 av 160 at \$10; to Mich. B. Co. 3 av 160 at \$7, 14 av 150 at \$9;

to Sullivan P. Co. 10 av 175 at \$5, 15 av 145 at \$7.25.

Roe Com. Co. sold Sullivan P. Co. 11 av 160 at \$9.50, 14 av 150 at \$9.50, 5 av 165 at \$7, 5 av 165 at \$10; to Mich. B. Co. 6 av 120 at \$9; to Barlage 3 av 140 at \$8, 9 av 145 at \$10; to Mich. B. Co. 6 av 155 at \$10, 13 av 160 at \$10.

Sandall sold Parker, W. & Co. 24 av 185 at \$7.75.

Sandall sold Kull 7 av 145 at \$9.50.
Haley & M. sold Goose 2 av 200 at \$7.25, 8 av 155 at \$10; to Parker, W. & Co. 10 av 162 at \$9.75, 15 av 150 at \$9.50, 18 av 140 at \$10; to Newton B. Co. 13 av 160 at \$10, 9 av 150 at \$9.50; to McGuire 6 av 160 at \$9.75.

Waterman sold Newton B. Co. 13 av 175 at \$9.75.
Weeks sold Rattkowsky 10 av 150 at \$9.75.

Bishop, B. & H. sold Burnstine 7 av 165 at \$10.25, 6 av 160 at \$10; to Parker, W. & Co. 16 av 155 at \$10, 19 av 160 at \$10, 20 av 145 at \$9.25, 18 av 150 at \$8.50, 6 av 190 at \$7; to Goose 4 av 140 at \$10.25; to Applebaum 17 av 145 at \$8.50; to Thompson Bros. 17 av 150 at \$10, 3 av 125 at \$8.50, 3 av 165 at \$9.50, 2 av 250 av \$7.50; to McGuire 6 av 175 at \$9.50, 3 av 130 at \$8, 14 av 160 at \$10; to Mich. B. Co. 11 av 145 at \$9.75.

Sheep and Lambs.

Receipts, 887. Market strong at Wednesday's or last week's prices; quality very common. Best lambs, \$7.50@8; fair lambs, \$5.50@6; light to common lambs, \$4.50@5; yearlings, \$4@6; fair to good sheep, \$3.50@4; culs and common, \$2@2.50; heavy fat ewes, \$3.25@3.50.

Bishop, B. & H. sold Varso 18 lambs av 68 at \$8; to Sullivan P. Co. 30 do av 67 at \$7.75, 4 sheep av 130 at \$3.50, 6 do av 88 at \$5, 5 do av 155 at \$2.75, 11 do av 70 at \$4; to Thompson Bros. 22 lambs av 70 at \$7.25; to Hammond, S. & Co. 14 do av 67 at \$7.75, 28 do av 70 at \$7.75.

Haley & M. sold Hammond, S. & Co. 11 lambs av 70 at \$7.75; to Sullivan P. Co. 12 yearlings av 85 at \$6, 50 lambs av 58 at \$7.25; to Newton B. Co. 17 do av 55 at \$7.50, 16 yearlings av 90 at \$5.

Sandall sold Sullivan P. Co. 12 sheep av 90 at \$4.

Spicer & R. sold Newton B. Co. 6 yearlings av 105 at \$5, 38 lambs av 70 at \$7.50, 4 do av 50 at \$7; to Sullivan P. Co. 41 do av 65 at \$7.25; to Mich. B. Co. 42 do av 68 at \$7.50.

Hogs.

Receipts, 3103. None sold up to noon; prospects 15c higher than on Wednesday. Range of prices: Light to good butchers, \$9; pigs, \$9; light yorkers, \$9; stags one-third off.

Friday's Market.

July 4, 1913.

Cattle.

Receipts this week, 868; last week, 2086. Market very dull at Thursday's prices; quality common. Best dry-fed steers and heifers, \$8; steers and heifers, 1000 to 1200, \$7.75@7.90; do. 800 to 1000, \$7.50@7.75; grass steers and heifers that are fat, 800 to 1000, \$7.50@7.75; do. 500 to 700, \$6@6.50; choice fat cows, \$6; good do., \$5.50@5.75; common cows, \$4.50@5; canners, \$3.50@4; choice heavy bulls, \$6.50; fair to good bolognas, \$5.50@6; stock bulls, \$4.50@5.25; choice feeding steers, 800 to 1000, \$6.50@6.75; fair do. 800 to 1000, \$6@6.50; choice stockers, 500 to 700, \$6@6.50; fair do., 500 to 700, \$5.50@5.75; stock heifers, \$5@5.50; milkers, large, young, medium age, \$5@6.50; common do., \$3.50@4.50.

Veal Calves.

Receipts this week, 885; last week, 1291; market steady at Thursday's close. Best, \$9.50; others, \$6@8.50.

Sheep and Lambs.

Receipts this week, 1108; last week, 1944; market steady; run very light; quality common. Best lambs, \$7.50@7.75; fair lambs, \$6@7; light to common lambs, \$4.75@5.25; yearlings, \$5@6; fair to good sheep, \$3.50@4; culs and common, \$2@3.

Hogs.

Receipts this week, 3538; last week, 5822. Market steady at Thursday's prices. Range of prices: Light to good butchers, \$9; pigs, \$9; light yorkers, \$9; stags one-third off.

LIVE STOCK NEWS.

The United States still has the largest numbers of food animals of any country in the world, although several countries have far more sheep, including Australia, Russia and Argentina. The only country having more cattle than this country is India. It is probable that there are ten times as many pure-bred Hereford cattle in the United States as in England, although England is still shipping many Hereford breeders to several South American countries, including both males and females. While the total value of meat products and food animals exported from the United States the fiscal year just closed will foot up only about \$150,000,000, compared with \$250,000,000 in 1906, this reduced total far exceeds that of any other country. Meat and food animals exported from Argentina in 1912 aggregated only about \$67,000,000 in value. Six countries, comprising the United States, Argentina, Australia, New Zealand, Canada and Uruguay are the chief meat exporting countries of the world. Our meat exports are not only larger than those of any other country, but actually exceed the aggregate exports of our five principal rivals.

The situation in the hog and provision markets is very bullish, with much smaller supplies of provisions in western markets than usual at this season of the year and mall receipts of hogs at packing points after every considerable break in prices. Stocks of lard and hog meats are gaining in volume, but the increase is by no means what it has been at corresponding periods in former years. As is customary at this time of the year, the quality of the hogs going to market is averaging poorer than it has been, with increasing offerings of big, heavy

old sows. A widening out in values may be expected from now on. Total hog receipts in all markets this year show a heavy falling off compared with the corresponding period last year, and extremely high prices seem to be assured for a long time to come.

Strange to say, New Zealanders have been purchasing dairy cattle in Wisconsin for shipping to that remote part of the globe, taking what suits them at almost any price. That country is greatly in need of dairy cattle, and Holstein cows are especially wanted. There is also an excellent demand in the Chicago market for choice dairy cattle to ship to the western mountain regions of the United States, and several car loads have been sent that way within a short time. It is no easy matter finding high-class Holsteins, Shorthorns or other breeds, and sales are made at \$100@125 per head for the few prime cows offered on the market.

The United States army is reported as short at least 1,000 horses. The quartermaster corps is trying to meet the requirements by establishing breeding stations on Indian reservations, and Major R. G. Paxton has organized the first of these at the Cheyenne agency in South Dakota.

D. W. Holtzlaw, an extensive stockman of Iowa, gives the following advice regarding shipping hogs in hot weather: "Don't overload. I have been shipping hogs for more than 40 years, and I have never known of so many hogs dying in transit as this summer, but my hogs have not died. Before loading I clean the car, bed with sand only, wetting it well. Then I fill eight bags with 50 pounds of ice each, and adjust them to the cross bars in the top of each car. This cools the air and keeps the hogs cool until they arrive in the stock yards. By so doing you will have no dead hogs."

CROP AND MARKET NOTES.

Lapeer Co., July 7.—Rain nearly every day since July commenced; decidedly cooler today; some haying done last week but cultivating corn, beans and potatoes was the general order of business. Corn in general not up-to-date in size and forwardness. Lots of potato bugs to deal with; oats well headed and booming; wheat turning quite fast. Lots of potatoes put in late this season, some as late as June 29; also beans. Hay crop averages light this year. Lots of wool in the hands of farmers yet. Hogs and sheep have been sold off freely. Raspberries and blackberries about the only berries this season, late frost cut strawberries, currants, etc. Apples and plums dropping off badly. Eggs, 22c; butter, 22c; old potatoes, 20c.

Washtenaw Co., June 29.—A week of high temperature ended. The thermometer has registered from 90 to 104 degs. for the entire week; this, for June, is "going some." With the exception of one small shower there has been no rain for six weeks and no signs of any improvement. Oats and old meadows have suffered. I hardly think oats will make more than 50 per cent of a crop. Corn that was gotten in in good shape and well cultivated is doing well but small and much of it is uneven. Haying will be in full swing about July 1. Prospects for about a 75 per cent crop. Hogs are scarce and much inquired after. Cows in good demand. Prices from \$50@100, according to quality, in fact there is nothing cheap but potatoes.

Berrien Co., July 2.—Harvest began this week and a very light crop. The fly has damaged wheat to a great extent. Along with the winter damage wheat will not average over 12 bushels per acre in this county. Corn is very small and backward, some fields only been cultivated once over. Hay is below the average in quality and quantity. Stock of all kinds generally in good condition. Hogs and cattle are scarce. Blight is affecting the pear and apple orchards and apples are falling badly. Huckleberry marshes promise a full crop. Butter, 22c; eggs, 20c; butter-fat, 29c; corn, 55c; wheat, best red, 85c. It has been exceedingly hot for the past ten days, 90 to 100 in the shade, and no rainfall.

Indiana.

Laporte Co., July 5.—Very dry, sultry and hot the last two weeks. Mercury 102 in the shade with but little wind. Humanity and horses suffered with the oppressive heat. Light rain this morning, but it soon vanished by the hot sun. Wheat good generally, oats light, corn growing fast, potatoes poor prospect, grass light, clover poor. Corn acreage above average and prospects good; stock doing well; cows shrinking some owing to extreme heat. Butter, 30@35c for dairy and creamery here. Water plentiful.

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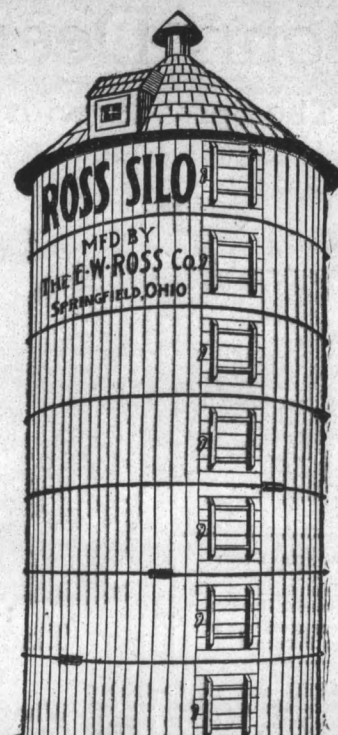
Reference, Washington Trust Company, or any bank in City

HAY Ship your carload lots to us, THE E. L. RICHMOND CO., Detroit, Michigan.

GINSENG—Golden Seal and Pink Root for planting, at wholesale prices with book of instructions. Write me before buying. J. W. SEARS, P. O. Box 563, Somerset, Ky.

Michigan White Cedar Fence Posts, GEORGE M. CHANDLER, Onaway, Mich.

FARMERS—We are paying 50 above the Official Detroit Market for new-laid eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., 31-33 Griswold St., Detroit, Mich.



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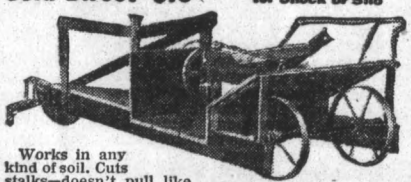
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Weldon, Iowa, Sept. 25, 1911.
Dear Sir—Your Corn Harvester was received and have cut fifty acres with it; it works good.
Yours, D. E. KNAPP.

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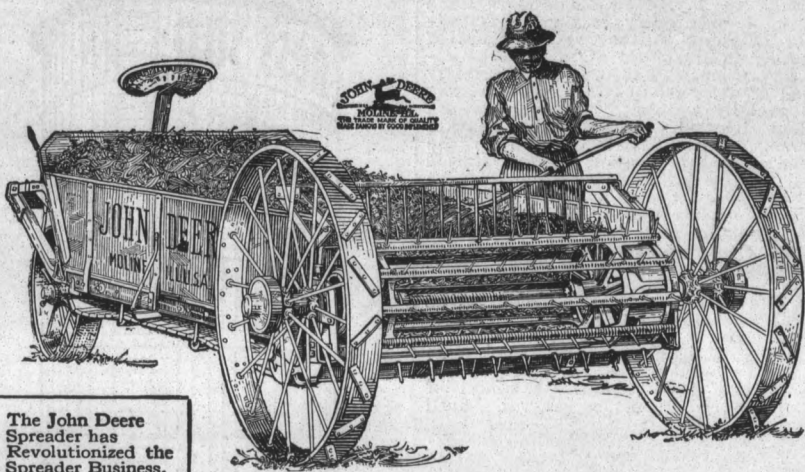
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Before buying anything of importance, whether by mail or at your local stores, check up the article with those of similar nature advertised in the Michigan Farmer. This will help you to make an intelligent comparison, and to determine which one will most likely best serve your particular purpose.

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John Deere Spreader

The Spreader with the Beater on the Axle



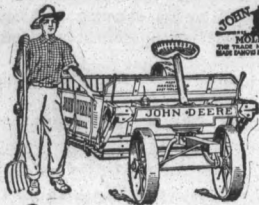
The John Deere Spreader has revolutionized the Spreader Business. Here are some of the Reasons:

BEATER and all its driving parts are mounted on the rear axle. Power to drive it is taken from the rear axle through simple gears like those that have been used on horse-powers for many years. This construction is patented. You cannot get it on any other spreader.

ONLY HIP-HIGH, easy to load. The top of the box is only as high as your hips. Each forkful of manure is placed just where it is needed. You can always see into the spreader.

FEW PARTS. Clutches, chains and adjustments—in fact, some two hundred parts in all—are entirely done away with. To throw the machine into operation, move the lever at the driver's right back until the finger engages a large stop at the rear of the machine.

ROLLER BEARINGS together with the simplicity of the machine itself, make the John Deere Spreader light draft. There are many more reasons that have helped to make the demand for John Deere Spreaders greater than all those interested in the spreader business thought possible. These features are fully discussed in our spreader book. You can get it free.



The Low Down Spreader with the Big Drive Wheels

What You Want

Here's your chance to get exactly what you want in a manure spreader.

One that is easy to load, light for your horses free from constant repairing, and one that will last as long as you think it ought to.

What You Get

With a John Deere you get a low-down spreader in which the advantage of big drive wheels is not sacrificed for the low down feature.

You get a spreader that is easy for your horses because it has these big drive wheels, together with roller bearings, few parts, the center of the load comparatively near the horses and evenly distributed over all four wheels.

No clutches to get out of order, no chains to give trouble, no adjustments necessary.

Built with steel frame, securely braced, like modern railway bridges—strong and durable.

Why You Get These Things

Mounting the beater on the axle makes all these things possible in the John Deere Spreader.

It does away with some two hundred troublesome parts. It makes the spreader low down. It permits the use of big drive wheels. It does away with clutches, chains and adjustments. It puts all the strain and stress of spreading on the rear axle, where it belongs, not on the sides and frame of the spreader.

It does a lot of other good things, too. They are fully illustrated and described in our new spreader book.

Get this Spreader Book

It tells how the John Deere Spreader is made and why it is made that way. It contains illustrations of the working parts and colored pictures of the John Deere Spreader in the field. It also has valuable information in regard to storing, handling and applying manure to the land.

Get one of these books free, by asking us for our spreader book, Y 5

John Deere Plow Co., Moline, Illinois

Practical Science.

WASTE OF FARM MANURES. (Continued).

BY FLOYD W. ROBISON.
Importance of Stable Floor.

The step following in importance the selection of the proper absorbent in the stable in preventing the waste of farm manures is the kind of floor used in the stable. Of course, the stable floor should be of material which does not easily absorb the soluble portions of the manure. About the only experiments that have come to our notice is the experiment conducted by the Ohio station some time ago, in which four steers were kept on an earthen floor and an equal number on a cement floor. The total amount of excrement in each case showed the considerable advantage in the use of the cement floor and, as might be expected, principally in the nitrogen content of the manure. The soluble nitrogen compounds being the most readily available of any were found to be at the same time most readily absorbed by the earth and consequently could not be of use subsequently upon the field.

Cement vs. Ground.

The total approximate value of the manure from the steers fed upon the cement floor was \$50 above that from the steers fed on the earthen floor, and this value consisted very largely in the increased retention of the nitrogen from the liquid manure.

The Prevailing Way of Wasting Manures.

One very common way in which the value of barnyard manure is wasted is to throw the daily accumulation into a pile outside the barn and give it no further attention until a large quantity has accumulated, making it economical, as the farmer thinks, for him to take a day off drawing the manure to the field. It is the consensus of opinion that the greatest conservation of the valuable constituents in manures is occasioned by the almost immediate transferring of the manure to the field on which it is intended to be placed. In this way it does not matter if the soil does take up the soluble ingredients because it is then accomplishing exactly what was intended. But perhaps the very poorest measures are those which we have just described above, whereby the manure heaps up in a stack outside the barn and without any attention whatsoever, it usually becomes heated and fire-killed throughout the entire core, thus making the product almost valueless as a fertilizer.

Composting the Manure.

Almost equally as good results may be obtained in the conservation of manures by carefully composting the daily waste. This requires some little attention to get the compost properly started but when once it is definitely planned and started it is just as easy to prepare the manure in this way as it is to allow some of the shiftless methods such as we have described above.

In composting manures it is a good idea to mix from time to time dry earth with the manure, spreading it out over a considerable surface. In this way the earth will absorb the soluble constituents from the manure and because the manure is intermingled with a considerable amount of earth, the fire-killing or heating will not take place but a general reduction of the manure, or rotting, will occur so that if it is desired to spread this upon the land at any particular time in the year the manure, if prepared in this way, will keep almost indefinitely without losing any of its valuable properties. This plan requires a little more foresight than most other plans but an effort of this kind is by no means idly placed.

The Way to Plan the Compost Heap.

It is a very good idea to plan the compost bed according to the space it is desired to fertilize. The farmer should plan carefully what fields he expects to fertilize and, in fact, this matter should be planned quite awhile in advance. In this way the compost may be properly prepared and the compost bed divided into sections for each field.

If there are four fields to fertilize, for example, then the compost bed may be divided into four sections, or at least this division kept in mind, so each field will get the amount of manure to which it is entitled. The usual method of drawing out the manure and scattering it over the land, thickly on some spots and

not any in others, is surely a hit and miss method. There is seldom if ever enough to go all over the place if this plan is followed, whereas if the needs of each field are carefully studied before hand and the compost bed is divided into sections each field will get its share. After all, the prevention of the waste of farm manure is in a large measure, the triumph of system.

FORAGE CROPS FOR SWINE.

In June, 1912, the Ohio Agricultural Experiment Station published a bulletin dealing upon the practical phases of certain forage crops as supplementing corn in the ration of swine. Most grain and succulent feeds contain considerable quantities of mineral ingredients and also show a large excess of bases over acids. Not only this but in recent years the high cost of grain feeds has made it seem desirable to supplement these feeds with others more economical and from both points of view forage crops are indicated.

Showing Value of Skim-Milk and Clover.

In the first experiment the following comparisons of feeds were made:

1st. Corn and skim-milk. 2nd. Corn and green soy beans. 3rd. Corn alone. 4th. Corn on mixed pasture. 5th. Corn on clover pasture.

The corn and skim-milk made the most rapid gains. Corn and soy beans, and corn on mixed pasture made equal gains, but require more corn on the mixed pasture than with the soy beans. The corn on clover pasture indicated the very great desirability of the use of clover in supplementing corn where it can be had.

In the second experiment in addition to the corn which was used in each lot, one lot was fed clover forage; another rape; a third, soy beans and bluegrass. Of these lots, all of which made remarkable progress, due to the effect, no doubt, of the green forage crops, it will be noted, as the Ohio station remarks, that the clover produced the most rapid gains, and in addition to this the lot on clover required less corn for the gain than did those on any of the other forage crops. Rape and soy beans were very similar in their effect and both proved better than bluegrass. It should be noted in this connection, as the Ohio station states, that perhaps the blue grass was not at its highest efficiency, due to a poor growth that particular season.

Tankage with Corn in the Ration.

In experiment three the pigs were divided as follows: The first lot were fed corn and tankage in the dry lot; the second were fed corn, tankage and allowed to run on soy bean pasture. The third were fed corn, tankage, and allowed to run on rape pasture; and the fourth were fed corn alone but were allowed to forage on rape pasture.

The results of this test indicated that corn alone is almost as good when used with the rape pasture as is corn mixed with tankage. "There seemed to be more growth with the lot fed with corn and tankage than with the lot fed corn alone, but the rate of gain and the amount of feed required for a given gain did not show that the corn and tankage mixture was much more efficient than was corn alone."

In experiment number four, two lots were experimented with. One lot was fed a grain ration of corn, nine parts, and tankage, one part; the other lot was fed 10 parts corn and one part tankage. In addition to this both lots were allowed to forage on mixture pasture, which pasture, however, was not very abundant and was kept grazed down very closely. Both lots made very satisfactory gains. "The difference in the rate of gains and in the amount of concentrates required for a given gain by the two lots was small. The lot fed the larger proportion of tankage made slightly larger gains and required slightly less feed per 100 pounds gain than did the lot fed the ration consisting of corn, 19 parts; tankage, one part. Although the ration consisting of corn, nine part; tankage one part, was slightly more efficient in producing gains in this test than the one carrying the smaller proportion of tankage, the difference shown is small, and these results should be verified by more work along this line before they are accepted as conclusive evidence of the relative efficiency of the two rations."

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

Abnormal Appetite.—We have two cows running in clover forenoon and in orchard afternoon. These cows seem to have a great appetite for dirty bones. V. E. R., Grand Blanc, Mich.—Give your cows 1 oz. ground gentian, 1 oz. bicarbonate soda and 1 oz. powdered charcoal at a dose in feed two or three times a day.

Lump-jaw.—Being a subscriber of your paper I have been watching the veterinary column for a reply to a similar question. Failing to find any, I am writing you to know what can be done for a cow that has a growth on right jaw. E. R., Holland, Mich.—Clip hair off bunch and apply one part red iodine mercury and eight parts cerate of cantharides to bunch every day or two. Give her 2 drs. potassium iodide at a dose two or three times a day.

Bursal Swelling.—I have a yearling colt that has a soft puffy swelling on hock joint which I would like to have removed. G. L., Tower, Mich.—Apply one part iodine and ten parts fresh lard to bunch every two days.

Fistula of Withers.—For the past 12 months my mare has been troubled with fistula of withers. I have succeeded in healing it several times, but it soon breaks out again. I have injected copperas water into tumor, but it fails to effect a cure. S. D. G., Elijah, Mo.—I am a believer in doing the right sort of surgical work on such cases; however, you will obtain very good results by applying the bacterin treatment which is administered hypodermically and this work had better be done by a Vet. You will obtain fairly good results by catching a half ounce of pus from bottom of cavity and placing it in 6 ozs. of clean water, then place 1 oz. of this solution in the animal's mouth and wash out wound with salt and water, made by dissolving 2 ozs. of salt in a gallon of water. In a week or ten days or perhaps two weeks, you had better give a second dose of the pus and water mixture. The wound should be washed out twice a day.

Wound on Shin.—I have been much interested by reading the veterinary column of the Michigan Farmer for the past ten years and would like to have you tell me what will heal a wound that fills with proud flesh, which is located on shin of horse. E. G., Stanwood, Mich.—Apply equal parts of powdered alum, oxide of zinc, boracic acid and iodoform, covering sore with a little oakum and cheesecloth bandage. It will perhaps be necessary to burn fungus with a red hot iron every two or three days; or apply burnt alum.

Horse Pants Badly.—Have a five-year-old horse that pants badly when working during the heat of day. W. S. H., Ray, Ind.—Feed less bulky food and give him a tablespoonful of tincture of arnica and a tablespoonful of sweet spirits of nitre at a dose three or four times a day.

Injured Stifle.—Our four-year-old mare was kicked on stifle joint a week ago today and on date of injury it was hard to locate the trouble for there was no wound. There appears to be some swelling below stifle, but none above, and I might mention that she must suffer pain for she holds leg up. G. W. S., Lyons, Mich.—Apply one part gum camphor and ten parts alcohol to sore parts three times a day.

Cow-pox.—I have two cows that have a breaking out on bag, little yellow festers appear, some as large as the end of finger are scattered over udder and these sores must pain them some for they are fidgety and uneasy about being milked. J. V. B., Linden, Mich.—Give your cows each a dessertspoonful of powdered nitrate of potash at a dose in feed two or three times a day and apply one part oxide of zinc and three parts vaseline to sores and sore parts once a day. Another inexpensive solution that has given me splendid results is made by dissolving 4 ozs. of hypo-sulphite soda in a gallon of water and wash the udder five or six times a day. This solution will usually check and destroy the infection. Of course, it is needless for me to say that this disease is readily communicated from one animal to another, if the milker is careless.

Drying up Milk Flow.—I have a couple of hundred beef bred cows here that have produced 29 calves to date and probably will have as many more. I expect to move these calves off the ranch, taking them off the cows to do so, as soon as they are a good weight veals and then would want to dry the cows up as quickly and economically as possible, not caring to save their udders for next year's use. Wishing to do it this way so as to get all the flesh onto them that I can before shipping out in the fall, and want to ask you to advise through the columns of your valuable paper, to which I have been a subscriber for over 20 years. Is there not some drug or solution I can apply to their udders to assist in producing quick results? C. S. B., Gladwin, Mich.—Cutting down their food supply for a few days and applying strong cam-

phorated oil to udders will have a tendency to lessen their milk yield, but it is bad practice to shock the system with drugs. Giving camphor inwardly or preparations of iodine or applying strong counter-irritating liniment to udder check the milk flow; however, it is bad practice and I believe you should treat your cows by dieting them.

(Continued from page 28).

lature would probably be called this coming winter, Gov. Ferris has announced there will be none unless some emergency requires it.

Ice-men of Saginaw are demanding an increase of wages and unless the firms grant the demand a strike is threatened.

Foreign.

General Armando Riva, chief of the national police of Cuba, was shot and mortally wounded during a pistol fight last Monday evening in the most crowded portion of Prado, Havana. The shooting is claimed to have been done by Gov. Asbert of the province of Havana, whom General Riva and his men had previously caught, with others, indulging in gambling, at one of the political clubs of the city.

While only meager reports reach the outside world of the war between the Bulgarians on one side and the Greeks and Servians on the other, enough has been learned to indicate the fierce nature of the engagements. Reports are contradictory but there is general confirmation of the news that the past week has been favorable to the Bulgarians. They have taken Vrania, which commands positions threatening the Servians' line of retreat. The Bulgarians are also reported as having put the Greek army of 80,000 under King Constantine, to rout, and occupied Nigrita and other points on the Greek line.

ANOTHER VIEW OF THE LIVE STOCK SITUATION.

A great agricultural paper like the Michigan Farmer should be capable of doing great good to the cause. To be of use, it must get the readers' confidence. To get and hold their confidence, it must give them the truth. To get the truth, writers must be unprejudiced.

Take, for example, "The Live Stock Situation," by N. A. Clapp, in your issue of June 28. Mr. Clapp says: "The farmer should keep the calves to maturity; that the demand has overtaken the supply; that the tariff is about to be tinkered to his detriment, etc."

The amount of stock to be raised in our state is limited to the amount of feed which can be produced, and the amount of feed is limited by the amount of labor the farmer can do, as stock must be fed six months in our state. The farm labor is limited to what the farmer can do himself, as there is more fun in town than on the farm.

The farmer can raise three \$25 calves on one cow through the summer without any labor except to raise feed to winter one cow, and then get butter enough through the winter to pay her keep.

If he had kept three calves on the same amount of feed, they would all have died of starvation. If he had bought the feed for them, they would not give a profit. The farmer can produce more pounds of veal than he can of beef.

Mr. Clapp says that under the new proposed tariff the farmer is brought into competition with the cheap meats of Australia and South America. Now, let us see if we have not always been in competition with them, without any protection except in print. We have been selling meat in Europe. If we stop, meat will go up in Europe. If it goes up in Europe and down here, why would Australia and South America send meat here instead of the Canadian roads, would Americans eat cheap Australian meat, it will leave us good meat to ship to Europe. Ocean freight is very little. It is the same with Canadian wheat. If Canada sends us 200,000,000 bushels of wheat free of tariff, they can not send it to Europe, but we can send an equal amount to Europe. The only difference that I can see is that the American railroads, instead of the Canadian roads, would do most of the hauling. How are we protected by a tariff when we have been selling in competition with South America and Australia all the time?

Now, we farmers have not been getting protection on wheat, meat, etc., nor do we ask any. All we want is a square deal. Take our protection out of print so that we will all know that we have not had any.

It would seem that we might be protected on sugar and wool, as we do not sell in other countries, but we know that such is not the case. The price of wool seems to be fixed here by our manufacturers, just high enough so we could not ship it to Europe.

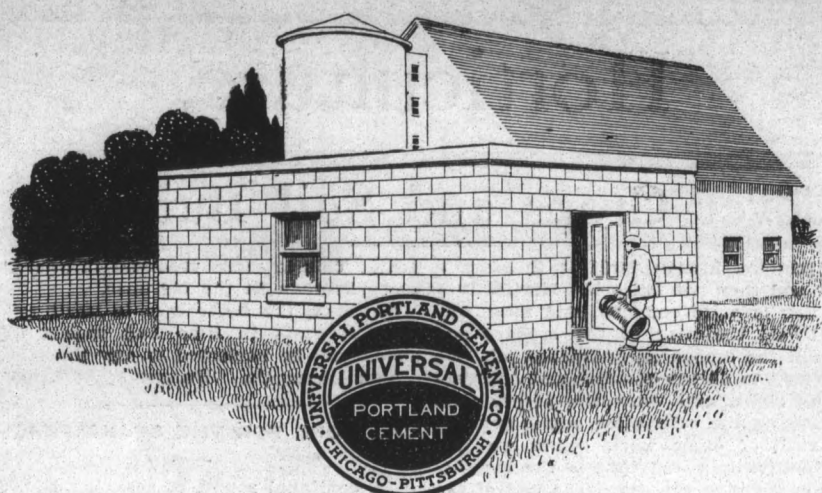
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JOHN FINLEY.

A VALUABLE REFERENCE.

In connection with the veterinary advice given in the Michigan Farmer, every reader can use to excellent advantage one of the Michigan Farmer Anatomical Charts. This chart illustrates the horse, cow, sheep, hog and fowl, the perfect animal, the bones, the muscles, the blood system and the internal organs, also giving the name and location of each bone, muscle, and vital organ. Dr. Fair, our veterinarian, recommends the use of this chart and believes it will help you greatly to make your questions better understood and also enable you to better understand the answers.

This chart is only one of the features of our six-page collection of charts which also contain maps of Michigan, the United States and the world, and many other valuable features. The entire collection will be sent postpaid, for only 30c. The Michigan Farmer, Detroit, Mich.—Adv.



The Concrete Milk House Is Clean and Sanitary

You cannot keep your milk fresh and sweet in an unsanitary milk house. Wooden floors and walls become milk soaked; decaying wood construction is a breeding place for germs. Many health officials require concrete floors in all milk houses. Build your milk house of concrete and use

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Such a structure has no cracks or crevices to collect dirt. It is cool in hot weather; warm in cold weather. A concrete milk house is not difficult to construct, and when completed requires no painting or repairs. Universal Portland Cement is of uniform high quality—sound and durable.

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in milk and flesh on each cow in a single season. Heals sores, stops itching and prevents infection. Nothing better for galls. Kills lice and mites in poultry houses.

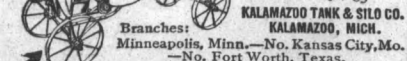
SEND \$1, if your dealer can't supply you. We'll send enough Shoo-Fly to protect 200 cows, also our 3-tube gravity sprayer without extra charge. Money back if not satisfactory. Name Express Office, Booklet FREE. Special terms to agents. Shoo-Fly Mfg. Co., Dept. H, 1310 N. 10th St., Phila. Editor knows from experience that Shoo-Fly is O. K.

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Horticulture.

Cover Crops and Soil Building.

A common human fault is to start a thing and then not finish it. Horticulturally this is quite common, and most frequently is the care of the orchard soil through the season an unfinished job. We are likely to do our plowing and cultivating all right, and when the proper time for ceasing the cultivation comes or when the rush of other work comes we just quit cultivating, and that is the last attention we give the soil. The end of the season's work in soil care should be the sowing of a cover crop. This is fully as important as the rest of the work.

Humus is a most important factor in soil fertility and plant growth. Without it our soil would be a veritable bank of sand or chunk of clay. It would be good for building material, that is all—merely dead dirt. Humus makes possible life in the soil and produces conditions suitable for the growth and well being of beneficial soil bacteria. It is nothing permanent but is constantly being used up, and cultivation stimulates the using up of the humus. Therefore more material for humus must be supplied. There is no more efficient or economical way of supplying this material in the orchard than through the use of cover crops.

Besides furnishing humus the cover crop is an important factor in the ripening up of the wood of the trees. Cultivation encourages the wood growth but something growing on the ground will take away enough plant food and moisture to check it and cause it to ripen up. The ripening or hardening up of the wood is very important. Trees not properly ripened will be susceptible to winter injury and to the various diseases of their kind. Such trees will not bear as well and their buds will be more susceptible to frost injury in spring than those properly ripened.

The cover crop will also keep the ground covered in winter, and in many places keep the ground from leaching. It will often prevent winter injury to the roots of the tree by furnishing this covering to the ground.

The time to sow the cover crop depends upon the season and the growth the trees are making. If the season be wet and one which is causing the trees to make a large growth the crop which should be put in not later than the middle of July. In dry years, those of little wood growth, it is better that the cultivation be continued until the first week in August, and then the cover crop sown.

Everything from weeds to corn has been used for cover crops but the clovers, vetch oats and rye are the most common and efficient. Oats and vetch make a fine combination for the lighter soils or any which lack greatly in humus. Oats can also be used in combination with any of the clovers. The kind of clover depends upon the soil. The mammoth and crimson seem to do better on the loamy soils while the common red is the best on the heavier lands. Crimson is liable to freeze out except in the southern parts of the state.

Some growers prefer to use a crop which dies down with the frost, so the ground will be easy to disk the next spring. Canadian field peas are probably the best legume for this purpose and oats the best non-legume although buckwheat is used considerably.

The practice of using such crops is not to be recommended for soils which lack humus or is the continual practice of it on any soil advisable. There is a decided advantage of turning under occasionally live green vegetable matter.

If the trees are making too much growth it is advisable to use the non-legumes alone for a while as the legumes tend to stimulate the wood growth. In many cases a rotation of cover crops, using non-legumes part of the time and the legumes part of the time, could be maintained which would keep the orchard in good normal condition.

As a matter of economy one might do as some growers have done in leaving a small strip of the cover crop unplowed in the middle between the rows. When the clover or vetch, whatever it might be, goes to seed the entire ground can be dragged and, in that way, reseeded from that strip. This will save the cost of seed and some time in seeding if the same cover crop is going to be used as last

year. This is more practical in younger orchards than in the old ones.

However, the cover crop is worth more than it costs in time and money and should not be neglected at any time.

Van Buren Co. FRANK A. WILKEN.

THE CURE FOR THE STUNG PEACH.

A continual round of spraying is necessary to produce good fruit and the farmer who slights a single application is losing money and reducing the value of the work done earlier in the season. Spraying yields a larger profit for the investment in labor and material than any other operation on the farm. It means the difference between a poor crop with small returns and a yield of fine quality fruit that will bring the best market price. The great number of destructive insects and fungous diseases make spraying a necessity and without thorough methods of control, the commercial orchardist faces a handicap that will practically put him out of business.

There is a tendency among many peach growers to regard the San Jose scale as about the only pest that requires their attention. The scale spraying is religiously carried on every year, but after the first application of strong lime-sulphur in the spring, many growers forget the necessity of keeping up the good work and the plum curculio and brown rot carry on a campaign of profit destruction that is far reaching in its magnitude.

This article will attempt to show the best method of control for the plum curculio, which is doing considerable damage in Michigan and the nearby states, and yet has never been classed as dangerous compared with its allied rival of destruction, the codling moth.

How the Curculio Works.

The plum curculio is a snout beetle and the adult averages about three-sixteenths of an inch in length. There are four stages in the growth of this pest, the egg, larva, pupa, and adult, and the first injury to the peach is caused by the depositing of eggs by the adult female. This depositing of eggs under the skin starts soon after the fruit is set and may continue for an indefinite time, depending on the season. A hole is made through the skin as deep into the flesh as the snout of the beetle will reach, and the egg is then placed by means of the ovipositor. It is then pushed down into the fruit and the crescent shaped cut is made. This slip prevents the eggs from being injured during the rapid development of the fruit. Seven or eight of these incisions may be made on one peach, and the result is a stunted specimen, that is unfit for the market. When the egg hatches, the larva eats into the center of the fruit and the interior becomes filled with excrement. Most of the fruit will fall from the tree if punctured while very young, and the old fruit will be covered with crescent-shaped scars and round feeding punctures, which make an easy inlet for infection from a fungous disease such as the brown rot. The exudation of gum not only spoils the appearance of the stung peach, but the sticky material becomes smeared on the unblemished fruit in the picking basket and the value on the market is greatly reduced.

The adult plum curculio spends the winter in fences and orchard trash and in the woods, when they are in close proximity to the orchards. They come out in the spring when the peach is blooming and before the fruit is set they will feed upon the young buds and foliage.

Methods of Control.

In the past many kinds of curculio catchers have been constructed to jar the insects from the trees, whence they are destroyed by burning. This is a rather slow and expensive method in a large orchard, as the trees must be jarred just at sunrise and it takes some time to remove the curculio catcher from tree to tree.

Spraying is the only good method of control for this pest and experiments have proven that the trees can be efficiently protected by the use of arsenate

of lead with or without the self-boiled lime-sulphur. If the brown rot is troublesome, the two mixtures can be combined and both the rot and the curculio can be controlled with the one spraying. If used without the self-boiled lime-sulphur for a fungicide, when there are no fungous diseases troubling the peaches, the proportion should be one and one-half pounds of arsenate of lead to 50 gallons of spray, and to this should be added the milk of lime from three pounds of good stone lime.

The self-boiled lime-sulphur is made of eight pounds of fresh stone lime and eight pounds of sulphur to 50 gallons of water. The best results from the lime made in the proportions of 32:32:200. The lime should be placed in a barrel and just covered with water. When it begins to slake, add the sulphur, which has been put through a sieve to remove the lumps, and stir continuously, adding water to keep a thick paste. When it is all slaked, water must be added to stop the cooking and cool the mixture.

To control the curculio, one and one-half pounds of arsenate of lead paste should be added to every 50 gallons of the self-boiled lime-sulphur wash, and as the mixture settles very rapidly, the arsenate of lead should not be added until the agitator is running in the spray tank and the spraying is ready to begin. Fine nozzles must be used and a uniform distribution of a fine mist-like spray will give the best results.

An Example.

The writer has observed the following experiment tried out and noted favorable results in the quality of the peaches on the sprayed plats compared with the fruit that was left wholly unsprayed. There were three plats of Elberta peaches in the experiment and the following mixtures were applied at three different periods: Ten days after the petals fell, the first plat was sprayed with arsenate of lead and milk of lime, but the second and third plats were not sprayed at all. One month after the petals fell, the first and second plats were sprayed with self-boiled lime-sulphur and arsenate of lead, while the third plat received only self-boiled lime-sulphur. One month before the fruit ripened all of the plats were sprayed with self-boiled lime-sulphur, but without any arsenate of lead. The second plat, as will be noted from the schedule, had no arsenate of lead except in the spray which was put on one month after the petals fell. The peaches on this plat were a beautiful sight and their color and unblemished skin caused considerable thinking among the farmers in the vicinity who had only sprayed their peaches for scale, thinking that the San Jose was the only pest in Michigan that was worthy of their attention. The fruit on the second plat was considered by all observers to be full as clean as the specimens on the other trees that had received a larger number of applications of the arsenate of lead.

The writer believes that one spraying of arsenate of lead, with or without the self-boiled lime-sulphur will control the curculio and prevent much of the stung fruit. The use of the fungicide of course depends entirely on the prevalence of the brown rot in the orchards, but if prevention is better than a cure, it will not be unwise to keep after the brown rot even though the damage may seem small at the present time. This application of the spray should be made one month after the petals fall. The arsenate of lead also appeared to give a better color to the fruit, and the Elbertas that were produced on the sprayed plat had a blush that had never been equalled in the history of peach growing on that farm. The writer has worked on a large commercial fruit farm that was considered up-to-date in all its methods and yet the stung peach was the bane of the business, though the manager did not seem to realize that the damage was sufficient to make the work of spraying worth while. Every year thousands of bushels of peaches were sent to the market containing many specimens of fruit smeared with exudations. They in turn helped to spoil the appearance of the unblemished peaches, and the stock as a whole was greatly reduced in market value. The fruit appeared sound to the grower, as the scars seemed a small matter, but when it came to the proposition of putting these specimens before the high-class trade, they lost caste, because there were men who could produce a peach that appealed stronger to the eye than the one with the dirty sting and sticky exudation marring its radiant blush.

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Address all communications relative to the organization of new Clubs to Mrs. C. P. Johnson, Metamora, Mich.

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LAND TITLE REGISTRATION IN OHIO.

In 1893 the legislature of Ohio authorized the governor to appoint a commission to investigate the Torrens system of land title registration, then in use in most of the English jurisdictions throughout the world and in many of the countries of continental Europe. After three years this commission reported that in its judgment it was feasible under our state and the federal constitutions to have such a system in Ohio and they reported a bill providing therefor which in January, 1896, was enacted into law by almost a unanimous vote of both houses of the legislature.

A suit was soon thereafter brought to test the constitutionality of the law and in 1897 the supreme court declared the law to be in violation of several of the provisions of our then state constitution. In the constitutional convention of 1912 an amendment was adopted clearing away these constitutional objections and this amendment was ratified at the election of September 3, last, by the second largest vote received by any of the 41 amendments submitted.

During the closing days of the legislature recently adjourned a bill providing for the registration of land titles, was passed by both houses and was later approved by the governor. The law, under the new constitution, will not go into effect until 90 days after the adjournment of the legislature, and provision is made that no registration under the new law shall be had prior to July 1, 1914. Registration is deferred in order that the constitutionality of the law may be tested in the meantime and, if it is held to be constitutional, that time may be afforded to provide the necessary records for installing the system.

Under the present system of land titles we record simply the evidences of title and in order to know the state of the title to a given piece of land it is necessary to examine all the evidences of title relating to this land since the organization of the state. These evidences of title are hunted out from the records of skilled examiners and arranged in consecutive and chronological order in the form of an abstract of title. This abstract is supposed to contain the material parts of every instrument and proceeding relating to the particular piece of land.

It is manifest that the value of this abstract will depend upon its completeness and accuracy and the care with which it is made and prepared. If any material matters are by mistake or otherwise omitted it is of little if any value. After the abstract is prepared the owner still has no information with regard to the state of the title, but in order to obtain this information he must submit this abstract to a competent attorney who will carefully examine the abstract of all the evidences of title contained therein and give the owner an opinion as to the character of his title and what liens and incumbrances there are upon it.

Again, the value of this opinion depends upon the ability, industry and care of the lawyer giving it. At best it is the mere opinion of a lawyer, which may or may not be correct, but which in any event will have little or no weight with any one except the person who employed the lawyer. It therefore follows that the making or verifying of abstracts has to be repeated with each successive owner or person dealing with the land and the opinions of different attorneys obtained

by these successive owners and interested persons. Not one title out of a hundred is bad, but it is the occasional bad title that makes necessary this continuous examination and re-examination of all titles. Under the present system many of these evidences of title do not appear in the records at all and have to be collected from outside sources, as in the case of a man dying without a will, and no administration of his estate in the probate court. In such case there is nothing in the records to show whom he left his widow and heirs. This information has to be collected by affidavits or other means from outside sources.

Ohio. HUMPHREY JONES.

(Continued next week).

CLUB DISCUSSIONS.

The Benefits of Recreation.—The Somerset Farmers Club was entertained at the pleasant home of Mr. and Mrs. A. W. Wood, in the village of Addison, June 28, and although the mercury stood at 100 degrees in the shade, and the busy season of haying and cultivating is at hand, a goodly number of its members, with several visitors, put aside the duties of the farm and met for an afternoon of rest and social, as well as intellectual enjoyment which always awaits those who attend these monthly gatherings. Mr. and Mrs. Wood until recently have been farmers and always took a lively interest in our Club. The president, Mr. H. Lembard, being absent, Mr. E. B. Lane acted as presiding officer pro tem. The usual opening of singing by the Club, of "Michigan, My Michigan," followed by prayer by Rev. L. D. Livingston, with more music, and business session. An address by Rev. Livingston on the Club topic, "The Benefits and Non-benefits Derived from Recreation." He being a college man the city young man and boy seems to stand ahead of the rural youngsters from an athletic point of view. All work and no play makes Jack a laggard, while play and exercise develops strong bodies, therefore a strong intellect. The city young man is given more time for recreation and athletics, while our country boys have not the same advantages and are often abnormally developed. One of the sad features of the country boy's life is the lack of proper recreation. The speaker advised a social center for which, in some places, the church is used, and should be open the week through. The centralized school is one method of solving the social problem, and also the Y. M. C. A. If we keep the boys and girls on the farm we must give them a part of the benefits derived from the farm, otherwise give them an interest in the proceeds. An interesting magazine reading, "The Red, White and Blue," by Miss A. Wilcox, with some fine violin music by Messrs. James & Peck, concluded the exercises, following with supper.—Mrs. Z. E. White, Cor. Sec.

An Educational Program.—The Columbia Farmers' Club was entertained by the Misses Stella and Della Palmer last Saturday. Owing to the death of the president, W. S. Culver, Dr. E. N. Palmer was elected to fill the vacancy, and presided at this meeting. Miss Hazel Brooks sang, "When Dreams Come True," and "The Slumber Boat," and Miss Mae Crego gave two readings. Prof. L. R. Taft, of Lansing, state inspector of orchards, was present and gave his advice as to spraying and caring for the orchard, and from his wide knowledge brought out many points not understood or practiced by many here who might raise the finest fruit. Speaking of the low price of apples the past season he said that almost without exception those who sprayed and produced perfect fruit got a fair price, while those who didn't received little or nothing. He followed with a discussion of spraying methods throughout the season, and answered many questions about spraying problems which were most helpful. Following this number Miss Maude Smith read an excellent paper on "Educational Value of Novels," a synopsis of which will be published in a future issue. This paper was well discussed. The following are some of the ideas of the Club members on the educational value of the novel. Miss Mae Crego said novels may be of a great deal of good as they have made us unafraid of our own ideas. Mr. William Lowry said as a child he had been taught the novel was a curse but he has found out that they bring out ideas according to the character of the novel. Mrs. Henry Peterson told how her fourth reader said: "Judge a book by the taste it leaves in the mouth." If there is a following uplift it is a good book, if it has only shown us the seamy side of life it is a failure. Mrs. Will Randall expressed her opinion as being much against the wild fairy tales. But how far to cultivate the child's imagination would be a question. In regard to Santa Claus, several different opinions were expressed, some in favor of delighting the child's imagination, while others were opposed. Rev. Mr. Sidebothan thought the novel a benefit as it changes our course of thought. During the months of July and August there will be no Club meetings held.

WANTED.

At once, a few men who are hustlers, for soliciting. No experience necessary. Good salary guaranteed and expenses paid. The work is dignified, healthful and instructive. In writing give references and also state whether you have a horse and buggy of your own. Address Box J. F., care Michigan Farmer, Detroit, Mich.

Grange.

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

THE JULY PROGRAMS.

Suggestions for Second Meeting.

Song, selected by Ceres.
Review of one number of National Grange Monthly, by Secretary.
Reading or declamation, "The country boy's creed."

We have contests for blue ribbon corn, pigs and cattle—why not for "better babies?"

Song, selected by Flora.

What could the authorities of our nearest town or village do to make the town more attractive, or more convenient, or of more financial advantage to country people who trade there? Discussion.

Are the town people or the farmers to blame for the late hours the stores are kept open on Saturday nights?

"Chip basket," prepared by Woman's Work committee.

Song, selected by Lady Assistant Steward.

WITH PLYMOUTH GRANGE.

A certain Michigan institute worker has been repeatedly heard to say, "If I were set down in a man's field in the dark, I think I could tell what sort of a farmer its owner is by the feel of the soil."

This saying came to my mind a few days ago when I sat with Plymouth Grange, Wayne county, during one of its regular summer meetings. There was that familiarity with the work and business-like process of handling the affairs of a Grange of upwards of 200 members that betokened knowledge and thrift. Nor was that all. This Grange is operating under a printed program for the year, put out very early in the season so that they have had full benefit from its use; they now occupy one of the most convenient and attractive appearing halls in the state and are getting it well equipped;

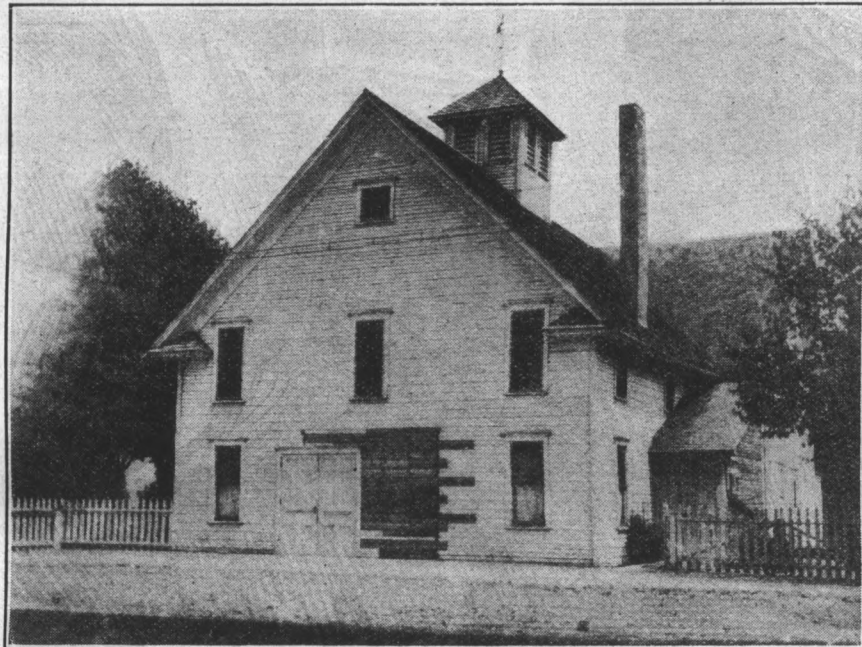
VISITING UPPER PENINSULA GRANGES.

After traveling through the parched regions of lower Michigan from Morley to Mackinaw City it was certainly restful to the eye to behold the meadowlands and roadsides of the upper peninsula clothed in the richest and most luxuriant green that nature can bestow. Grass is growing in the greatest abundance everywhere, in fact, more goes to waste here than the pastures below contain; an ideal country for stock, unsurpassed for the dairy.

At Allenville, 15 miles north of St. Ignace, a most excellent band of patrons have held up the banner of co-operation for several years. Joe Luepnitz, master, and Cousin Paul, secretary, are certainly enthusiastic workers; in fact, 15 members of that family are represented in this one Grange. Bro. Joe took me on a round of visiting and sightseeing which most decidedly raised the opinion the writer held of the U. P. as an agricultural country. Fine roads everywhere, good buildings, large fields, sleek looking stock and the happy, satisfied faces of the people are undoubtedly evidences of prosperity. Over at Rexton, nearer the center of Mackinac county, a small Grange meets, but the members are full of hope and enthusiasm. Master Ben Lockwood and Bro. Russel and his good wife are certainly grand entertainers. This Grange will now meet in the Odd Fellows hall at Rexton to accommodate a number of good patrons near Garnett.

From here we ran farther west to Gould City, where to southward we picked up Newton Grange with 28 members and a lively contest under way. The latching string is always out at Bro. Ketcheson's and Bro. Welch's. Coming back to Engadine and going north to the now discontinued post-office of Donald you pass through another beautiful region of rich clay loam soil. From here I journeyed to Newberry, a beautiful village in which the U. P. asylum is located. Going up to this institution you pass the elegant residence of Bro. Beurman, master of Newberry Grange, and his fine, large farm just beyond. Bro. Beurman's heart beats in perfect unison with the surrounding farming community and he is a leader in all enterprises that tend to its uplift.

A 15-mile drive to the southwest from Newberry leads you over half of the distance through wild, unsettled territory but proves a revelation to the stranger as he sees thousands of acres of as nice fertile farming land as can be found anywhere in the state. Don't say that



The Newly Acquired Home of Plymouth Grange, of Wayne County.

they voted in 11 new members at their first June meeting and received another application; and they made plans for a Grange-family celebration of the Fourth.

This is an old Grange which for many years met at the homes of members but last year it outgrew such gratuitous quarters and cast about for a home of its own. The framework for such a home it found in a large, well built barn, near the heart of the village, and which, refitted and arranged, makes an excellent community hall under control of this sane, steady Grange. Everybody concerned is to be congratulated on the outcome. One thing I particularly liked about the hall is that it is not built after the "box type" style of architecture all too commonly followed in the past by builders of halls. The outside lines are broken by two uprights, and the inside arrangement is agreeably pleasant in consequence. Light and airy, provided with kitchen, storage and dining-room facilities, anterooms and toilet accommodations, and equipped with electric lights—altogether it is a comfortable and convenient Grange home. When the busy season is past, and a coat of paint is added, with some few other touches, Plymouth Grange may keep open house to any Grange in Michigan without apologies whatsoever.

JENNIE BUELL.

farming is not profitable here, for one sees farm buildings that compare favorably with those in almost any part of lower Michigan. C. F. KIEFER.

Ionla Pomona held a meeting with Sebawa Grange, June 19. It was a fine gathering of real progressive men and women, such a meeting as one may reasonably expect from that splendid country. Those patrons who were absent were certainly losers. A fine practical program was carried out and it was often said by those present that it is profitable to stop work for a day, even in a busy time, and go to the Pomona meeting. Mrs. Olivia J. C. Woodman was present and gave two addresses in the afternoon and evening.

Windsor Grange, of Eaton county, is not allowing the interest to lag during the hot weather. A minstrel show was the feature of a recent meeting, 25 members, dressed as colored performers, taking part. A "pink tea" was given by the ladies, and the gentlemen entertained the audience with songs and smart sayings. After the fun was over, pink lemonade was served to the 125 persons present.

COMING EVENTS.

Pomona Meetings.

Clinton Co., with Oyd Grange, Wednesday, July 16.

Picnics and Rallies.

Montcalm-Gratiot farmers' rally and picnic, at Summer, Wednesday, July 23. State Master Ketcham, speaker.

Picking a Present for Mother



JAMES MONTGOMERY FLAGG

In the millions of orders we fill every year none give us greater joy than the supplying of gifts for some loved one at home. Grocery orders, furniture orders, clothing orders, implement orders—all, of course, have our greatest care and attention. But, when a letter is received saying: "This purchase is a gift for mother—a remembrance on her birthday or wedding anniversary" it goes through our great fifty acre establishment with a sense of loving responsibility that permeates every man or woman who handles it.

And we receive thousands of such orders.

This announcement will be read by hundreds of thousands of our customers who use the Montgomery Ward & Co.'s Catalogue constantly for the supplying of their many needs.

To them we say, when you are ordering a gift for father, mother, son, daughter or friend, don't fail to mention the fact when writing.

To those who are not *now* our customers, we ask the privilege of sending our wonderful new Catalogue, which shows in truthful text and picture thousands of items at small cost that can be used for gifts.

And then, in addition, it shows over a hundred thousand other items—groceries, clothing, shoes, hardware, furniture, farm implements, everything from a paper of pins to an automobile which can be purchased through this great modern method of merchandising at a lower cost with higher quality than you can secure elsewhere.

The book weighs several pounds. It contains 1000 pages—every one of them a wonderful store window of surprising bargains. It is sent absolutely free on request—without any obligation to you. Your copy is waiting. All you need do is to ask for it. Write today. Now.

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The Cyclone is powerful, durable, repair-proof—made almost entirely of finest steel. Unbreakable steel baling chamber, adjustable tension, makes smooth, clean, tight bales, 75 to 125 lbs. as desired. Three strokes each circle. Self-feed. Works at stack, barn or windrow.

Here's the biggest money maker you can buy. Low price. Free trial and absolute guarantee on every press. Write today—full information free.

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