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SUPPLEMENTAL FEEDS IN PORK PRODUCTION

In early days the swine grower had little occasion to study rations. The general practice of allowing hogs to run at large, gathering a large part of their living from the forests, produced coarse animals but furnished conditions so natural that about everything they needed for good, all-around development was supplied. The nuts, roots, herbs, variety of grasses, insects and other animal food, together with the exercise, pure water and freedom from confinement, produced strong constitutions and a fair development of all parts of the hog's body. When well supplied with these various foods there was a uniform, natural growth; the blending of fat and lean was good; the vital organs strong; the reproductive power unimpaired.

With the clearing of the forests, the building of fences, the general cultivation of the land and, in the corn belt, the growing of large crops of corn, the hog

with confinement. No longer was it possible for the hog to obtain the great variety of food without assistance. He had to depend on his owner for variety in his ration and too often the owner failed to provide it. In many cases it was corn first and last with its lack of mineral matter and protein. Lack of exercise also worked injuriously. The result was a hog with weak bones, unduly fat and impaired in constitution and reproductive power. These things held true more or less according to the particular methods of the swine growers, some allowing an extreme number of defects.

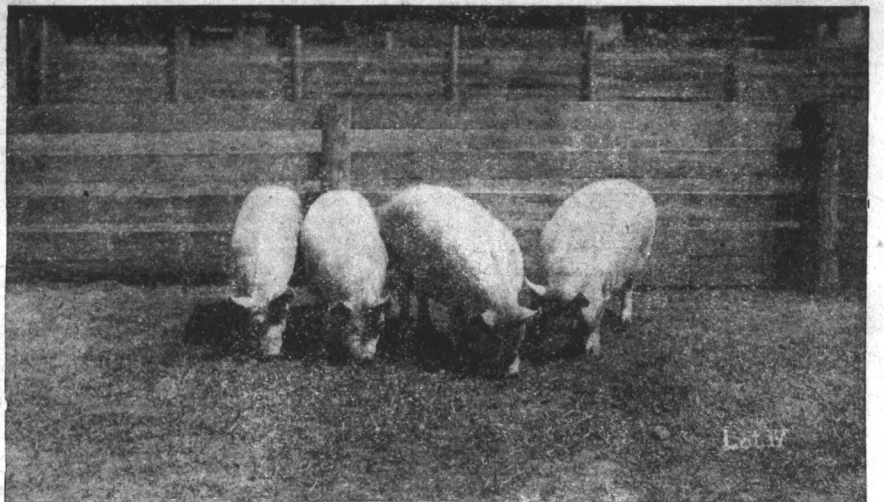
Supplementary Feeds.

After awhile swine growers began to realize the ill effects of confinement and excessive corn feeding, and a more rational method had its beginning. Then it became almost a necessity to study rations and upon this study experimenters and practical swine growers are still

and thresh such crops as cow peas and soy beans, a valuable feed is obtained to combine with corn. The value to the land, of these crops, especially the legumes, is a strong point in their favor.

In bran and middlings (or shorts) the wheat plant furnishes two valuable hog feeds, good supplements to corn. Bran is very good for brood sows and for the whole herd after attaining some size, until the fattening period is reached. Middlings are excellent feed for hogs of all ages and are freely used thruout the country. A ration of half corn and half middlings is very satisfactory in the herd. Ground oats has a good effect upon hogs, especially upon brood sows. For young pigs the hulls should be screened out. A ration of one-third ground oats and two-thirds corn meal has been found very good for shotes above 100 lbs. A little oil meal added will make it still better. Ground rye and ground barley also have

sparingly, but should be used with great care as it has killed many hogs. Legume hay has a place in pork production. It is especially fine for brood sows and may also be used for growing stock. Several of the experiment stations have used the hay from cow peas, clover and alfalfa with good results. In feeding Kaffir corn alone and combined with alfalfa, the Kansas station was able to grow hogs more rapidly and economically with the combination. To be sure, large amounts of legume hay should not be fed; it is too bulky. But a moderate supply may be used profitably. The leaves, bloom and fine stems are eaten greedily. Lastly, we may add the dairy by-products. Where available there is no better feed to combine with corn than skim-milk, butter-milk and, to a less extent, whey. Best results are obtained by feeding, say, three to five parts milk to one part corn. By using one or more of these supplemental



The Hogs Used in the Experiment on Supplemental Feeds. The Feeds Used and the Gains Made by Each Lot are Given in the Accompanying Article.

was no longer allowed to roam at will. Confinement became his lot and he was fed according to the inclinations of his owner. This was not bad in itself, for conditions had changed in a number of ways. It was no longer necessary for the hog to walk a long distance to market. Rail and water facilities had come into existence. Then, the market demand had changed from the extremely large animal to one of moderate growth. Confinement suited these changes very well. It is also to be noted that the demand for medium-sized pork was right in line with economical production. The young, thrifty hog is the profitable one where wide range is not available. But a number of adverse factors were found in connection

working—in fact, have only fairly begun. Many feeds are now combined with corn, some extensively, others in certain localities. Some, indeed, replace corn almost entirely, others are used more nearly as supplements to the great supply of corn, which is and will doubtless remain the basis of pork production in the corn belt. Among the forage plants, clover, alfalfa, Canada peas, cow peas, soy beans, chufas, peanuts, rape, rye and the various grasses may be mentioned. Indeed, it is almost out of the question to attempt to grow hogs extensively without some of these forage plants. In gathering them from the field the hogs get the exercise so necessary for strong, vigorous development. Then, if it is desired to harvest

a place on many swine farms. The various roots and tubers, such as Irish and sweet potatoes, artichokes, sugar beets, etc., are not especially rich in protein, but they give succulence to the ration and promote health and thrift. Pumpkins, either raw or cooked, are excellent to combine with corn. Then, there is a considerable list of rich meals of vegetable and animal origin which make excellent supplements to corn in pork production. Oil meal, gluten meal, tankage and blood meal come in this class. One part of these to six or eight parts corn makes a good ration. Even less of the meal will prove a decided advantage. Perhaps cottonseed meal should be mentioned. It seems to be all right if used

feeds and others which may be used in combination with corn, the swine grower can produce cheaper and better pork than by using corn alone.

An experiment in the study of a number of these supplements to corn is reported by Prof. J. H. Skinner in Bulletin No. 108 of the Indiana Experiment Station. The experiment was conducted by the writer, under the direction of Prof. Skinner, with the following objects. 1. To determine the value of soy beans as a supplement to corn in pork production and to encourage farmers to grow their own protein for hogs. 2. To compare soy beans with middlings and tankage as supplements to corn. 3. To show again

(Continued on page 372).

FARM NOTES.

More Alfalfa Questions.

Please advise thru your valuable paper how long it takes alfalfa to mature or when should first crop be cut? I do not know anything about growing alfalfa and never saw it grow until this year, when I seeded a small piece of land to alfalfa. I sowed it in the spring with my oats; it came up very thick. At first it was ahead of the oats but as the season advanced and dry weather came the alfalfa seemed to go back in the ground and this fall there don't seem to be many plants left. Will these plants come up from root in the spring and ever amount to anything, or is this country too far north to grow alfalfa?

R. B.

As has been before stated in these columns it is impossible to lay down any general rules with regard to growing alfalfa in Michigan. It is as erratic in the time required to produce the first crop as in other respects. The writer knows of one case in which it was sown on a fertile piece of land, the seed bed having been exceptionally well prepared, in which it made a crop of two tons per acre in a little more than 60 days from the date of sowing. But this was an exceptional case. Ordinarily where the crop makes a good stand there will not be much of a crop of hay the first year, even where it is sown comparatively early and without a nurse crop. But the second year it should give a good crop for the first cutting and should yield two or three good cuttings, if the stand is good and the inoculation with the bacteria peculiar to the plant is general. But in case there is poor inoculation with this bacteria the crop will not be good until such inoculation becomes general, as the alfalfa plant will not thrive without its presence, at least not upon the average soil. In cases where the conditions are favorable and the bacteria present in the soil in sufficient numbers, the crop will yield about as well the second year as it will afterward, but in a majority of cases it is longer than that in coming to "maturity," as it is expressed by this inquirer, especially upon soils where it has never been grown before.

It is doubtful if this alfalfa will make a good stand. It is a tender plant when young, and the setback it received from the drouth will be likely to thin out many of the plants and weaken the others. A thick stand is essential to good results, hence the advisability of sowing on a well prepared seed bed without the use of a nurse crop, giving the alfalfa the best possible chance to get established. But so far as climate is concerned no part of Michigan is out of the alfalfa belt. The writer has seen it growing luxuriantly at the Upper Peninsula Experiment Station, in plots where it had been sown for some years, and it has been successfully grown in almost every county in the state.

Drainage For the Cellar.

We would like to build a cellar under our house. We thought of raising the house about three feet, then digging a hole about three feet deep for cellar, but the land here is low and level, and during the wet season of winter and spring the water is more or less level with the surface of the land; then, of course, my cellar would run full of water, so then I can not depend upon draining it out. I would like to know if some readers of the Michigan Farmer have had success with building a cellar without an outlet drain, depending entirely upon the material used for the side and bottom of cellar to keep the water out, and what material was used in making such a cellar?

Muskegon Co.

J. V. J.

Without any doubt it is infinitely better to provide drainage for the cellar if at all possible, even at a considerable expense. While various methods of keeping the surface water out of cellars thru the agency of the material used have given varying degrees of success, yet none of these methods are as certain or as satisfactory as good drainage to start with, and, in the opinion of the writer, where this cannot be obtained it would be better to construct cellar storage apart from the dwelling and partially or entirely above ground, rather than to take chances on a cellar with poor drainage.

However, for the benefit of the inquirer, we will briefly review the different plans which have been given in the Michigan Farmer and used in other lines of construction for this purpose. In the construction of concrete bridges where it is desired to keep the water from the concrete it is sometimes given a backing of pitch, which makes it impervious to water. Mineral paints are also sometimes used for the same purpose. But in the making of a concrete floor and wall for the cellar this would not be convenient, and probably a better way would be to give the wall and floor a backing of rich concrete, and an inside finish of the same consistency. Others advocate a backing of puddled clay for a cellar wall built where there is poor drainage. This,

when hardened, will be but slowly affected by water, and would be a considerable protection for the concrete. Both walls and floor should be made comparatively heavy to insure good results, since the pressure of the soil water would be considerable in the bottom or on the sides of a cellar built in a poorly drained soil.

DOES FARMING PAY?

We hear and we read that farming is booming. It is very true, that farm produce is bringing an extra good price. It is also true that the cost of production is very high. Many farmers are selling or renting their farms and going to the town or the village to live, and many more would if they could find a buyer.

We have educated our boys and girls and sent them to the agricultural college, or some high-school, and that has "cured" them; they learn some easier way to get a living than working on the farm, and spend what the old folks have left them.

We can figure on the expenses of a corn crop, "The King of Crops," and where we hire all the work done, the plowing, the rolling, the dragging, the planting, the cultivating, cutting the corn at three cents per shock, the shredding, or putting in the silo, the rent of the land, the cost of the silo, etc., and there is but little profit left. Wages are \$1.50 per day or \$24.00 per month. There is many a farmer who has lost all his summer's work by drouth and frost; others have been drowned out, and have to get some outside job to pay their taxes.

I have been traveling this route over sixty years, trying to help feed the nation and get an honest living, but have to do a little more than chores to keep in sight of the booming times.

Brother Farmer, is this a true story? Allegan Co. A. G. H.

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Some Inside Information About "A Kalamazoo Direct to You."

Your first impression when entering the door, should you visit the Kalamazoo Stove Company's plant, would be the immensity of the building. Following close upon that would come the thot of the bigness of the enterprise. You look at ranges, heaters, gas stoves, wood stoves, stoves of every kind and for every purpose piled tier upon tier and the effect is stupendous. You never knew there were so many stoves in the world before and to find this enormous quantity all under one roof, all made by one concern, all sold one at a time, from that one warehouse produces an impression never to be forgotten. The Kalamazoo warehouse has storage room for 30,000 stoves. And every foot of space and every one of the 30,000 stoves is needed, too, many a time. Every Kalamazoo stove sold goes direct from the factory to the customer—no dealers and no jobbers. In this way the company is enabled to make their famous low prices, which have been proven beyond question a very great saving to stove buyers. The big Kalamazoo factories cover five acres of ground. They have facilities for turning out one high-grade stove every two minutes of the day. This remarkable equipment means that every order for a Kalamazoo stove is shipped within twenty-four hours after its receipt. "A Kalamazoo direct to you" means no aggravating delays, no worrisome uncertainty. Your order is received, entered and filled like clock work. Shipped to you just as fast as the first freight can carry it. The Kalamazoo stove business is built upon the reliability of the company and the sterling qualities of their product. The personal word of the vice-president, William Thompson, several times mayor of Kalamazoo, is back of every statement they make, as well as a \$20,000 bank bond. An enterprise built upon a foundation so solid as that must succeed and the Kalamazoo Stove Company is proof.

Of Value to Horsemen.

Do you turn your horses out for the winter? If so, we want to call your attention to a very important matter. Horses which have been used steadily at work, either on the farm or road, have quite likely had some strains whereby lameness or enlargements have been caused. Or perhaps new life is needed to be infused into their legs. Gombault's Caustic Balsam applied as per directions, just as you are turning the horse out, will be of great benefit; and this is the time when it can be used very successfully. One great advantage in using this remedy is that after it is applied it needs no care or attention, but does its work well and at a time when the horse is having a rest. Of course, it can be used with equal success while horses are in the stable, but many people in turning their horses out would use Caustic Balsam if they were reminded of it, and this article is given as a reminder.

Lost Or Strayed Stock.

Ear tags on sheep, hogs and cattle often prevent loss of animals. They cost very little. F. S. Burch & Co., Chicago, can supply you.



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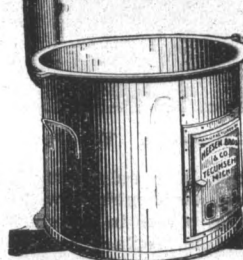
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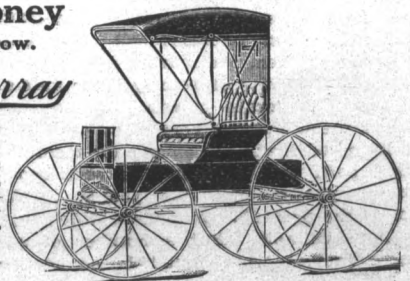
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PHOSPHATE ROCK, OR FLOATS, AS
A FERTILIZER.

Will some one of your competent writers please answer the following questions thru The Farmer and oblige a constant reader? 1st, What part does phosphorus perform in the growth of the following plants: Corn, wheat, oats, clover and timothy, and what proportion of it enters into each plant in comparison with nitrogen and potash? 2nd, How may we know that our farms are deficient in phosphorus by the way the crop grows, and if so will raw rock phosphate laid down to us at \$8 per ton, guaranteed to contain 12½ per cent phosphorus be the cheapest way to replenish the soil, in company with manure, and if so what is the best way to apply it?

Cass Co.

J. W. S.

It is impossible in a short article to go fully into detail in answering the very important question which J. W. S. asks. To begin with, phosphorus is one of the essential elements of fertility. No plant can live without it. There are three essential elements: nitrogen, phosphoric acid and potash. The reason they are called essential elements is because all of the other elements which enter into the food of plants are usually abundant and are readily obtainable by the plant. There are thirteen elementary substances which enter into the food of plants. These include gases of the air and minerals of the earth. Carbon, for instance, is a gas that enters largely into the growth of plants, yet the farmer does not have to pay any attention at all about carbon. The plant can get all of it that it wants. It is the same way with oxygen. Nitrogen, however, is a different proposition. Most plants can only get nitrogen after it is combined with some other substance and is a part of the earth, and plants take their nitrogen thru their roots. With the case of leguminous plants however, it is different. Here, microscopic plants which live upon the roots of leguminous plants have the power of taking free nitrogen from the atmosphere and changing it into nitrates, in which form the roots of the plant can use it as a food. Iron is also an element of plant growth, but the farmer does not have to pay any attention to supplying his plants with iron because it is so abundant that the plants can get all they need. It is so with all of the other substances with the exception of nitrogen, phosphoric acid and potash. These three substances are more largely used by plants than any others, and most soils are lacking in these three substances. Hence they are called the essential elements of plant growth, or as Dr. Kedzie used to say in his lectures on organic chemistry, these three food substances constitute the tripod of agriculture, the three legs upon which agriculture stands. You can't grow luxuriant plants unless you have all three of them in sufficient quantities for the needs of the plants. If nitrogen, for instance, is in excess of phosphoric acid and potash, you cannot grow a plant to its maximum limit unless you supply the phosphoric acid and potash. Also, if one of the mineral elements is lacking, this must be supplied and agriculture, as Dr. Kedzie well said, must have these three legs or it is not in stable equilibrium.

Now, phosphorus specifically goes to produce seed and to hasten the ripening of plants. The seeds of all plants contain a large per cent of phosphorus. Hence we conclude that phosphorus is very essential to the growth of the young plant. When we plant a seed the young plant feeds upon the food in the seed at first and then upon food obtained from the soil.

But phosphorus is very important in other respects. The nitrogenous compounds in the plant cannot be absorbed into the circulation of the plant unless phosphorus is present in the solution. In this respect it performs a very similar function to common salt in animal digestion. It is a physiological fact that osmosis in the animal system does not take place readily unless the solution is saline, or salty, and in the plants the absorption of the food does not take place readily and become a part of the tissues of the plant unless phosphorus is present in the solution.

Again, the microscopic plants in the soil which change the organic matter from inert to available plant food, cannot live unless there is a certain amount of soluble phosphoric acid. In other words, the bacteria of nitrification are not present in a soil deficient in phosphorus and cannot live without phosphorus. Hence we see that the element phosphorus, or phosphoric acid, in the form in which it exists in the soil, is very important.

When you grow a crop of wheat that fails to fill properly, it's a pretty good indication that available phosphoric acid is lacking. It's the same way with corn

and the same way with any other cereal crop. If young plants do not show a thrifty growth, it is a pretty good indication that the soil is lacking in available phosphoric acid also. You cannot have a healthy, vigorous plant of any sort or description unless it has sufficient soluble phosphoric acid.

The amount of phosphoric acid removed by different plants compared with potash and nitrogen is as follows: A ton of corn contains and takes from the soil 34.6 lbs. of nitrogen, 14 lbs. of phosphoric acid and 8 lbs. of potash. A ton of wheat removes 47.2 lbs. of nitrogen, 15.8 lbs. of phosphoric acid and 10 lbs. of potash. A ton of oats removes 41.2 lbs. of nitrogen, 16.4 lbs. of phosphoric acid and 12.4 lbs. of potash. A ton of clover hay 41.4 lbs. of nitrogen, 7.6 lbs. of phosphoric acid and 44 lbs. of potash. A ton of timothy hay 25.2 lbs. of nitrogen, 10.6 lbs. of phosphoric acid and 18 lbs. of potash. But of course the amount of these ingredients removed by a plant do not really tell exactly the importance of phosphoric acid. This is much more important to the farmer and the growing crop than the amount of it removed would seem to indicate.

Now, as to the question of the practicality of using raw ground phosphate rock or floats, as a source of phosphoric acid. This is a new thing and really we know but little about it. Experiments are just being made in a practical way and we have got to wait for results. Years ago it was discovered that if phosphate rock was treated with sulphuric acid that the insoluble phosphoric acid would become water soluble and could be readily used by plants. That was the beginning of artificial fertilization. This raw phosphate rock, of course, is insoluble in water. Yet plants can get a small portion of it slowly. The roots of plants exude a mild acid that will dissolve small portions of phosphate rock so that it can be used by the plant; but it is too slow to grow maximum crops. We have got to have phosphoric acid in a more available form if we want to push things. Now, when this rock is finely ground and mixed with the soil, the plants can get to it in better shape than they can in the form of solid rock. There is no question about that; but still it is not water soluble. Now the modern idea is that these floats, or ground phosphate rock, if used in connection with stable manure or other organic matter, when this manure or organic matter decays the acid in the organic matter dissolves, or will have, in a mild degree, the same effect upon the phosphoric acid in the floats as sulphuric acid, rendering a portion of it water soluble. Experiments made in the Ohio Experiment Station at Wooster would seem to indicate that stable manure has a very marked effect in making soluble the phosphoric acid. When floats are applied to a clover sod and plowed down, the decaying clover roots will dissolve a portion of the rock and make some of the phosphoric acid water soluble. How much of it we do not know. If you put on phosphate rock this fall and plow it down, you need not expect to get the best results for a year or two to come. It has got to lay there in the soil until the organic matter decays. When phosphate rock has been treated with sulphuric acid, the phosphoric acid is made water soluble and the plants can use it at once.

Now, another question enters here. It is advisable for dairymen and all owners of live stock to use some kind of an absorbent in the stable to absorb the liquid manure and the gaseous ammonia which comes from the liquid manure. Dry road earth is a good absorbent, and plaster or sulphate of calcium is a good absorbent, and so is ground phosphate rock. Now, when you buy land plaster you buy it solely for its absorbent powers, because very little of our soils are deficient in lime. You get no plant food, therefore. On the other hand, when you buy floats, you do not buy it for its absorbing power, but you buy it for the phosphoric acid which it contains. Applying this in the stable, you get the absorbing power that you do in the land plaster and pay for it according to the per cent of phosphoric acid it contains, hence you get the absorbing power which you pay for in the land plaster for nothing in the phosphate rock.

A number of experiments made at different experiment stations would seem to indicate that a farmer could afford to pay eight or ten dollars a ton for ground phosphate rock if he uses it judiciously with stable manure as an absorbent. In other words, mix it with the stable manure as it is applied to the land. This renders a certain portion of it available and makes it soluble phosphoric acid.

COLON C. LILLIE.

VALUE AND DETERIORATION OF
STABLE MANURE.

Since 1897 the Ohio Experiment Station has been making experiments with manure from a large number of growing and fattening steers, dairy cows and sheep and a report of these investigations, dealing with the amount and composition of manure produced by different animals under varying conditions, the deterioration and preservation of the manure and its effectiveness as shown in field experiments with different crops, has been received by the U. S. Department of Agriculture, as follows:

"In the experiments steers fed on a cemented floor produced 38.9 pounds of excrement, exclusive of bedding (which averaged about seven pounds additional), per 1,000 pounds of live weight per day. Three-fourths of the nitrogen and phosphorus and seven-eighths of the potassium given in the feed and bedding were recovered in the manure thus produced. The quantity of manure produced by dairy cows was considerably larger than that from fattening steers. Lambs fed under shelter on an earth floor, on which the manure was permitted to accumulate, produced 29.86 pounds of excrement, exclusive of bedding (which averaged 3.29 pounds additional), per day and per 1,000 pounds of live weight. About two-thirds of the nitrogen, four-fifths or more of the phosphorus, and nine-tenths of the potassium contained in the feed and bedding were recovered in the manure from lambs thus fed.

"When manure was exposed for three months in an open barnyard, during the winter and early spring, it lost nearly one-third of its total fertilizing value, as shown by chemical analysis. When such manure was compared with fresh manure in field experiments, the ton of yard manure produced increase to the value of \$2.15, as a 10-year average, while the ton of fresh manure gave an average increase of \$2.96 for the same period, showing a loss in effectiveness of 81 cents per ton, or 27 per cent.

"When either fresh or yard manure was re-enforced with gypsum or kainit its effectiveness was decidedly increased, but when floats or acid phosphate was used, the gain was very much greater, so much so as to make it relatively unprofitable to use gypsum or kainit.

"The net gain from the use of acid phosphate as a nature re-enforcement has been greater than that from floats, and the ton of fresh manure, re-enforced with 40 pounds of acid phosphate, has produced a 10-year average increase to the value of \$4.57 over and above the cost of treatment, or more than double the increase produced by the ton of untreated yard manure.

"When manure has been compared with other fertilizing materials on the basis of chemical elements contained, the results justify the assumption that the nitrogen, phosphorus and potassium of farm manure may be expected to produce effects equal to those produced by the same elements in such fertilizing materials as tankage, bone meal and muriate of potash, when the two classes of elements are used in equal quantities and in the same relative proportions."

Washington, D. C.

G. E. M.

BACTERIA AT THE SEAT OF PLANT
LIFE.

Bacteria are minute, living things, invisible to the naked eye. They are so small as to require a magnification of 500 to 1,000 times before they become discernible under the microscope. On the average, it will take 25,000 bacteria, placed end to end, to make up one linear inch. Bacteria of various kinds are present in all soils, ranging from less than 28,000,000 per ounce of soil to ten, fifty or even a hundred times that number. In extremely fertile garden soils, or in sewage-contaminated earth, their numbers may increase to many billions per ounce. Because of their enormous numbers the bacteria in the soil are enabled to accomplish a great work—the most stupendous work in nature. It is they who decompose the soil humus and render available the food it contains for the vast vegetable kingdom. To them also is reserved the important task of transforming the nitrogen gas in the air, as such unavailable to crops, into compounds of nitrogen which may serve as a source of food to cultivated plants. Without bacteria in the soil the humus would not decay, and, accumulating in large amounts, would soon render the land unfit for the habitation of plants. Bacteria are one of many kinds—some dangerous, as disease germs; others helpful, as the soil bacteria mentioned.

Save Your Back!
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It's the only back you'll ever have. The right kind of saw will take the hard work and the backache out of wood-cutting. It won't cost you much to make the job short and easy.

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Wood Saws

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Buy an Atkins—be sure it bears our name. If it doesn't make wood-cutting easier than you ever thought it could be, take it back to the dealer and get your money back.

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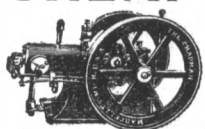
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LIVE STOCK

SUPPLEMENTAL FEEDS IN PORK PRODUCTION.

(Concluded from first page).

the deficiency of corn as a sole ration on the swine farm.

Sixteen cross-bred pigs were divided into four lots of four each. Their dams were pure-bred Yorkshires and their sire pure-bred Poland-China. The lots were equally divided as to sex and approximately equal in weight, the pigs averaging about 61 pounds each when the experiment opened. All were thrifty and ran together until divided into the four lots two weeks before the test began. During these two weeks they were fed equal parts of corn meal and middlings and their gains were very similar. Throughout the experiment the feed was weighed dry and given twice daily in the form of a medium thick slop, feeding just as much as was cleaned up promptly. Small lots free from plant growth were available; also comfortable sleeping sheds. Charcoal and salt were kept in each pen. Each pig was weighed regularly once a week. The experiment lasted for a period of twelve weeks. The feeds used were, corn meal, selling at the time this experiment was made, at \$18 per ton, middlings at \$22, digester tankage at \$33, soy beans at \$33½. The prices of corn meal, middlings and tankage were the actual cost; the soy beans were rated at \$1 per bushel, which gave a good profit over the cost of production. The cost of the beans per acre is about \$8, according to a number of experiment stations. Those used in this experiment made a yield of 25 bushels per acre. The following rations were used, by weight: Lot 1, corn meal alone; lot 2, ½ corn meal, ½ wheat middlings; lot 3, ¾ corn meal, ¼ soy bean meal; lot 4, 5-6 corn meal, 1-6 tankage. The accompanying illustrations show the pigs at the close of the experiment. The following figures give the most important facts brought out in the test.

During the twelve weeks the corn-fed lot gained only 183 lbs., an average of .55 lbs. per head daily. Lot 2, fed middlings and corn, gained 365 lbs., an average of 1.09 lbs. per head daily. Lot 3, fed soy bean meal and corn, gained 402 lbs., an average of 1.2 lbs. per head daily. Lot 4, fed tankage and corn, gained 348.5 lbs., an average of 1.04 lbs. per head daily. That is, lot 1 made one-half as much gain as lot 2, less than one-half as much as lot 3, and somewhat more than one-half as much as lot 4. Expressed differently, the use of middlings increased the gain 100 per cent, soy bean meal 120 per cent, and tankage 90 per cent, over a ration of corn alone. Soy beans proved most effective. The corn-fed lot made very poor gains and there was no regularity in the increase, such as was noted in the other lots, especially lot 3. Lots 2, 3 and 4 consumed practically the same amounts of food during the experiment; lot 1 about 1-5 less.

At the beginning of the experiment each of the pigs was daily consuming about 2½ lbs. of feed. At the close, lot 1 was consuming 3½ lbs. each, the others over 6 lbs. each. The sole corn ration had impaired the digestive capacity of the pigs in lot 1. In daily gain per head it was found that all the lots made satisfactory gains except lot 1. The cost of gain taken from the value gives the profit. There was a loss of three cents on lot 1, a profit of \$5.75, \$5.66 and \$4.49 respectively on lots 2, 3 and 4.

The feed and cost per 100 lbs. gain are interesting. It required 557 lbs. of corn meal alone to produce 100 lbs. gain; only 343 of ½ corn meal and ½ middlings; 311 lbs. of ¾ corn meal and ¼ soy bean meal; 362 lbs. of 5-6 corn meal and 1-6 tankage. The cost per 100-lb. gain was \$3.44 in the middlings lot, \$3.59 in the soy bean lot, \$3.71 in the tankage lot and \$5.01 in the corn lot. Looking at the results in a different way, 172 lbs. middlings saved 385 lbs. corn, 104 lbs. soy beans saved 350 lbs. corn, 60 lbs. tankage saved 255 lbs. corn; or 1 lb. of middlings saved about 2½ lbs. corn, 1 lb. soy beans, about 3½ lbs. corn, and 1 lb. tankage, about 4¼ lbs. corn.

These figures bring out strikingly the need of supplemental feeds to combine with corn for growing hogs. But as striking as the figures are, they do not impress one so forcibly as the actual condition of the pigs when the experiment closed. The illustrations show some of the variations fairly well. One can note the fine bone, lank appearance, high flanks and general unsatisfactory condition of lot 1. At the beginning of the experiment

they were thrifty individuals with soft hair and skin and good appetites. Soon after changing to corn alone the appetites weakened and at no time was there the keen appetites found in the other lots, especially lots 3 and 4. They would eat slowly and act dissatisfied. It was very hard to keep them on feed, frequent changes in the quantity of the ration being necessary to do this. A slight increase in the ration on a few damp, muggy days was apt to throw them off feed. They showed an intense desire to get at the grass which grew outside the pens. When the test ended, their hair was coarse and stiff, skin harsh, bones fine, backs and hams poorly developed, flanks high, and they had a sharp, complaining squeal not at all like the contented grunt of a well nourished hog. They were not in market condition and would have sold at a lower price than the others. Although for comparison they are rated the same as the others, which makes the results more favorable to them than actual facts justify with the quoted prices of feeds. There was no sickness among the pigs of this lot.

The pigs in lots 2, 3 and 4 developed satisfactorily. Lot 2, fed middlings, ate well, but there was not the keen edge to their appetites as exhibited in lots 3 and 4. They were somewhat paunchy, due to the bulk of the middlings, but were well developed. Lot 3, fed soy bean meal, was the most uniform of any. The four pigs gained at practically the same rate and developed into a fine type of animal. Their backs were broad, hams full and quality of flesh good. The hair was soft and skin mellow. It took a few days for them to become accustomed to the flavor of soy beans, but afterward their appetites were keen and it was no trouble to keep them on feed. They were, taken as a whole, more nearly in market condition than the others. They carried considerable fat and showed evidence of being near the finishing period. Lot 4, fed tankage, required a few days to learn to eat the tankage well. Afterward they had uniformly keen appetites, in fact, were almost ravenous at times. Three of the pigs were smooth animals of fine quality. Their flesh was firmer than any of the lots. They had what is termed a "meaty" appearance. The fourth pig did not grow well the first half of the experiment and this made the results less favorable to tankage than they would otherwise have been.

Conclusions.

The conclusions from the experiment are, briefly: Corn alone is unsatisfactory for growing hogs. The addition of some supplement is desirable. The three supplements used, i. e., middlings, soy bean meal and tankage, proved satisfactory. The soy beans produced gains on the least amount of food and this lot was more uniform than the others. The beans are a promising addition to the swine ration. Taken alone, these conclusions may not be convincing, but combine them with the mass of testimony in the form of experiments and practical results in various parts of the country, and they are irresistible. Time and again have experiment stations and practical feeders shown the deficiency of corn as the sole ration for growing hogs. Probably most feeders realize it. Many have long ago adopted different methods of feeding. More are falling into line each year. But it is so easy to go to the crib and toss out a feed of ear corn that many are prone to follow this method. To be sure, for market hogs, this is not bad practice if the hogs have access to a good pasture of clover, alfalfa or other good forage crop. And even without pasture, it is not bad to feed corn alone in the finishing period if a good thrifty growth has been secured previously, the even here it is better to give some variety of ration. But let us get away from the practice of corn alone for young hogs. It is bad for the hogs; it is worse for the pocketbook.

Middlings are generally recognized as a desirable feed to combine with corn. Feeders use it extensively. Among others, the Wisconsin, Missouri, Indiana, South Dakota and Florida experiment stations report increased gains by the addition of middlings to the corn ration. Digested tankage is a feed of comparatively recent origin and its use is extending as feeders become convinced of its valuable qualities. It is a dark brown, ill-smelling, finely ground substance, manufactured by the packing houses, especially for feeding purposes. It is made from meat residues, scraps of fat, bone, etc. These are dumped into a large tank and thoroughly cooked under pressure. The grease is removed from the surface and the residue is then dried at a high temperature. Later it is ground, screened and bagged for shipment. The high tempera-

ture destroys all disease germs if any are present. The product is very rich in protein, that used in the Indiana experiment analyzing 51 per cent of crude protein, the greater part of which was probably digestible. Both the Indiana and Iowa stations have published results of experiments with tankage. They place a high value on the by-product of the packing houses. The cost seems high, but is reasonable when considered on the basis of protein content. Pigs soon learn to eat tankage and develop keen appetites for it.

Soy beans have not been used very much as food for hogs, probably due to lack of knowledge of their characteristics and value. They enrich the soil by drawing nitrogen from the air the same as the clovers. The Kansas station says: "The soy bean is an erect growing plant, one and one-half to three and one-half feet in height, with a stiff, woody stem having branches like a miniature tree. The foliage is heavy and the plants start to branch close to the ground. The branches are thickly covered with pods which usually contain two to three beans to the pod." The beans are usually drilled, after the weather becomes warm, in rows two to three feet apart, and cultivated. The hogs may be allowed to gather them or they may be harvested and threshed and then ground for the hogs. Good land should yield an average of 20 bushels per acre, which means about 360 lbs. of digestible protein per acre, as the beans contain almost 30 per cent of digestible protein. A 20-bushel crop of wheat would mean about 120 lbs. of digestible protein per acre. As stated before, the beans can be grown for about \$8 per acre, perhaps less, which makes them a very cheap source of home-grown protein. At least three other stations have reported experiments with soy beans in the swine ration, i. e., Kansas, Kentucky and Tennessee. At the Kansas Station the pigs, receiving soy beans and corn or Kaffir corn, made gains of 14.6 per cent to 18.7 per cent over corresponding lots receiving only corn or Kaffir corn. In these same experiments the amount of gain per bushel of grain varied from 7.5 lbs. to 15.5 lbs. This is interesting in pointing out what extremes may be reached in growing swine. It may be said of soy beans that they are easily grown, are productive, bring nitrogen to the soil, withstand drouth well, are rich in protein and oil and furnish an efficient feed to combine with corn in pork production. Swine growers throughout the corn belt, especially in the warmer sections, would do well to investigate the merits of soy beans as a supplement to corn.

Summary.

In conclusion, we may summarize in a few words what has gone before. It is well established that corn alone is deficient as a sole ration for hogs. Some supplement is necessary for satisfactory results. What shall this supplement be? We have mentioned several and have given particular attention to middlings, tankage and soy beans. These are satisfactory; others are also. Let each swine grower study his conditions as to soil, climate, market, etc., and decide after a fair trial which one or more of these and other supplements will probably be best. The decision will in most cases include one or more of the legume crops and other forage crops, with the addition, perhaps, of some of the rich purchased feeds. In this way a better class of hogs will be marketed and increased prosperity will come to the swine grower.

Indiana.

J. G. GENTRY.

The above discussion of the use of supplemental feeds in pork production should appeal to the reader at this time, since the conditions under which pork must be produced are unusual. True, pork is a good price at present, but feeds are also high, and under these conditions too many farmers dismiss the subject of supplemental feeds in the compounding of a proper ration for their growing hogs and feed what they have at hand. Possibly it may pay to produce hogs at present prices by these methods, but the number of light-weight, unfinished hogs that have been finding their way to market in recent months at a considerable cut in price as compared with well grown and well fattened hogs, is an indication that this question of supplemental feeds might be profitably given more consideration by the average grower of hogs, even where they are produced only on a small scale. It will certainly pay to purchase shorts or other protein feeds to balance up the ration for the growing hogs, where dairy by-products or home-grown feeds of the right kind are not available for this purpose. It will likewise pay to plan on the production of some suitable feed for this purpose.—Ed.



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But there are other ways than making land rich to increase its value. Land will always sell for what it will pay the interest on after defraying the cost of cultivation. Sometimes better cultivation alone will do this, tho always with this better soil cultivation comes more rapid soil exhaustion. It is the farmer's business to exhaust the fertility. That is the way he gets his living. He takes fertility as the raw material that nature furnishes him, and turns it into as many forms as he chooses, and of kinds that will most likely give him a profit. If he has energy and skill in doing this the farmer grows wealthy, and the fact that it is the farm that has made him rich makes the farm more valuable than it was before. People will always believe that what one man has done someone else can repeat. Thus often the introduction of a new crop that is well adapted to the land and the climate is the cause of increased wealth, not merely to one individual but to all the farmers in the neighborhood. The discovery that low, mucky land in western Michigan was adapted to growing celery is an instance of this. The setting apart of rough land along the shores of the deep small lakes in western New York for grape growing is another example. It should be every farmer's duty to find new and profitable crops, so that he can secure a much greater income from his land. In proportion as he does this he will be successful.

But success to the farmer is, after all, more apt to come to him incidentally than from the direct product of his land. He finds it necessary from the first to stock his farm with domestic animals that are required in working it, or to consume products that are otherwise unmarketable. This stock increases and the farmer finds profit from the sales of the surplus. After awhile by better feeding, and ultimately by better breeding, superior strains of stock are produced, which will command higher prices, for the good reason that they will make so much better use of all that they will consume. By the time a farmer is able to secure or to breed stock of this character, its care becomes more important to him. If his land will not produce enough for his stock or can be put to better uses he will buy grain and feed to it, producing only coarse feed to go with the grain. This has been the result on scores, and even hundreds of farms, whose owners set to work at improving their stock as an easier way of making money. After years of improved stock

growing they find that they have made their land so rich that it can be put to uses that at first they had not expected.

There are thousands of farmers whose land is poor, and try the best they may, they cannot get manure enough to make it rich. If they increase crops by more thoro cultivation they find that while temporarily their profits are larger, it is at the expense of greater soil exhaustion, that must be compensated for afterward. This class of farmers should cease thinking so much about their land and crops and pay more attention to their farm stock. If they keep largely of young animals such stock doubles very quickly in numbers and if it be properly bred it will double in value in the same time. Is not this a much better outlook for profit than relying on making something from a crop which the land has produced after paying all the expenses of plowing, protection from insects and blight, harvesting and marketing? When a farmer comes to realize what he has to do before he can grow a crop and put it into money, he will be apt to wonder how he ever came to think of making money on a poor farm that way. If he does make

ferior stock double each year on a farmer's hands only results in making him each year poorer than he was before, because it will eat more than it will be worth.

Texas.

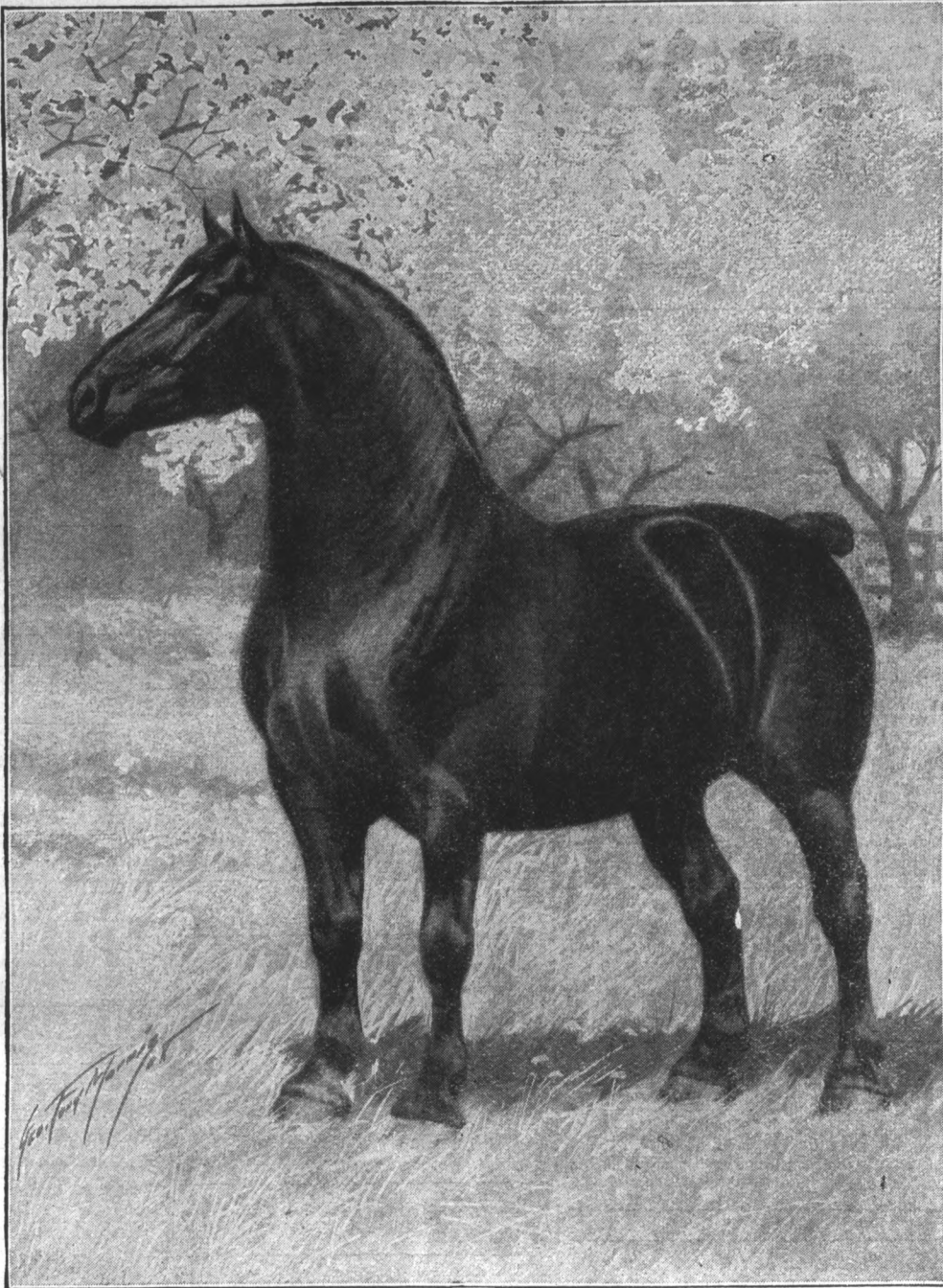
A. M. LATHAM.

FEEDING AND CARE OF THE FARM HORSE.

The writer was particularly impressed by the address of Dr. Waterman, former professor of Veterinary Science at M. A. C., delivered at the Washtenaw County Institute last winter. Dr. Waterman left the enviable position which he occupied at the college to become an active farmer and stock breeder, and took this opportunity to help his brother farmers by passing along to them some sound advice on the breeding and care of farm animals.

We shall not attempt to summarize his earnest and practical remarks, leading up to his discussion of the rules of feeding, as we could not do them justice, so we will simply mention some rules of feeding emphasized during his talk.

1. Feed regularly.
2. Water before feeding. Especially



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any money he has certainly earned it all. Too often it is truly said that some men work hard all their lives and have nothing to show for it after all, while others who take things more easily find wealth coming to them from unexpected sources. It is easy to guess if these different classes of farmers, that the man who works hardest and has least is the man who is consciously trying to make his land rich and at the same time doing his best to get the largest crops from it; while the man who makes money easily has had the foresight to secure the best possible stock and by its increase make both himself and his farm rich. This is the purpose most farmers try to aim for, and with the easy plan of keeping valuable stock and letting it grow on their hands, it does seem surprising that more farmers do not succeed. The truth is, however, that there is as great difference in stock as to paying its way as there is in crops. Some stock never has paid and never will. To have this in-

applicable to the horse. Water will then be absorbed and will not dilute digestive juices.

3. Do not feed grain when tired or hot. Blood is then in the muscles and requires some time to become equalized before it can go to the stomach and digest food. It is also best to postpone watering for a time, certainly never water and feed both as the food will not digest for a long time.

4. Do not exercise violently after feeding. This draws blood from stomach and retards digestion.

5. Change the ration gradually.

6. Increase the grain ration gradually. Nature abhors sudden changes. The proper juices are not ready for the new foods or increased amount.

7. Do not allow horses to have access to hay continually. Five pounds of hay three times per day, fed with a proper grain ration is enough for a horse. It is cheaper and better for horses to feed

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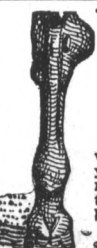
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moderate quantities of coarse feeds and buy grain if necessary.

8. Continual use of overripe hay overworks digestive organs and leads to indigestion.

Some other points touched upon were the importance of good care, shelter, kindness, and scientific feeding; watering often to avoid drinking too much at one time; the importance of regular work or exercise, often neglected in the farm horse in winter. Indigestion is the most common ailment and is indicated by downcast look, rough coat, tight skin, ravenous appetite, etc.

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S. B. H.

LIVE STOCK NOTES.

The consumption of beef has undergone a marked increase, and this is especially the case thruout the east, where the effects of the great panic of 1907 are felt far the worst, great numbers of men having been thrown out of work. Colder weather naturally stimulates the demand for beef and other meats, and the packers have been improving the opportunity afforded by liberal supplies of western range and native farm cattle to put away large quantities of beef for winter consumption. They have made their selections largely from medium-priced cattle, which have been in heavy supply in Chicago and other western markets for several weeks. Great numbers of common grass-fed cattle from western farms have also been showing up, but while these and medium to good cattle have ruled much cheaper, strictly prime beefs have been extremely scarce and have been taken at fancy prices for the eastern trade.

Idaho has been marketing sheep and lambs from its extensive ranges remarkably liberally recently, and in a recent week Chicago and Omaha received in the aggregate 350,000 sheep head, of which the packers got 250,000 head, the remainder going to feeding sections. It is learned that packers have been freezing a good deal of mutton for consumption later on, after the range flocks stop coming to market. Good lambs have netted \$4 per head to the grower in the Chicago market, and lots of rangemen have made 100 per cent on the capital invested, it is said. With the rapid narrowing of the ranges thru settlement, rangemen are investigating the big tracts of cheap rough land in Wisconsin, Michigan and other states of the middle west. Many such tracts are offered for sale at prices that in the future will be regarded as absurdly low, and they are bound to advance materially in value as the years go by.

Owing to the rapidly increasing sales of automobiles everywhere there is a great falling off in the sales of coach horses and drivers in Chicago and other markets where horses are sold at auction and private sales in large numbers. The substitution of automobiles for horses is also seriously affecting the carriage business, and Maurice Connolly, of Dubuque, Iowa, president of the Carriage Builders National Association, said during the recent thirty-seventh annual meeting of that organization in Washington, D. C., that carriage builders either will be obliged to retire from business or devote their attention to the construction of automobile bodies. Another serious situation was presented by an assistant forester of the federal agricultural department. He warned the association that the supply of hard wood from which the bodies of both carriages and automobiles are constructed was diminishing rapidly and that in 20 years it practically would be exhausted. It may be added that motors are being adopted on large farms in fast increasing numbers and in the future they will to a great extent take the place of horses. In the horse markets the big demand runs as a rule on heavy drafters, and not enough of the best class are bred to meet the growing requirements of buyers. The next best demand a good share of the time is for horses for distribution among farmers to be fattened for the market. These horses are of the draft type. The bane of the horse trade is the great number of inferior animals bred and sent to market, sales of which have to be made at unsatisfactory prices.

The Cudahy Bros. Packing Company, of Milwaukee, have sent out a circular letter of advice to hog growers all over the west, pointing out plainly the bad business policy involved in the indiscriminating marketing of grassy half-fat pigs at this time. One thing that led them to do so was the recent overwhelming receipts of thin hogs and pigs, there being such a surplus at Milwaukee that they had to get rid of their surplus one day not long since by shipping to the Chicago market eighteen filled cars of grassy extremely light hogs and pigs. Chicago packers purchased most of these at a big discount from the prices paid at the same time for properly matured hogs. The letter contains the following good advice: "They lose money for us, no matter at what price we buy them. There is nothing to them but skin and bones, and when the meat is put in salt and piled up in the cellar the water runs from it in streams. We think that the farmers are making a mistake in their anxiety to get rid of these young pigs, for, judging from the present outlook, it will be a long time before good hogs will sell under \$7, and it will pay the farmer much better to hold these pigs and feed them than to rush them off, half-fatted, at the present time, for every bushel of corn fed to such pigs will pay them 75 cents in pork. Please do a little missionary work along those lines and try to get the farmers to hold them back and feed them; also if you bring such stuff to market be prepared to take your medicine."

Horses had a pretty good outlet most of last week, although there was no big demand, and common animals moved off slowly. Farm chunks sold moderately at \$140-\$175 per head.

FRESH IMPORTATION ARRIVED SEPT 8, 1909.



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These Horses are all Prize-Winners

from the leading shows in Europe; ages from two to four years old; terms to suit the purchaser. Byron is located on the Toledo & Ann Arbor R. R., 44 miles north of Ann Arbor and seven miles south of Durand, immediate connections off the Grand Trunk R. R.

Every horse guaranteed, and all at low prices.

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DISPERSION SALE!

—OF—

58 Scotch and Scotch Topped

Shorthorns

At Recreation Park, Kalamazoo, Mich.,

Nov. 16, 1909.

18 fresh cows with calves at side, 5 bulls, 19 heifers. One of the best Dual Purpose Herds in America; Cows that carry plenty flesh and are extra milkers. Most of the cows are sired by Imp. Bapton Magna. 206899. The heifers and calves by Mara Victor 261383. Remember I bred the best milking S. H. cow in the World's Fair Dairy Test at St. Louis, 4th and 5th at Chicago. Every Shorthorn in the herd was bred by me except 2 cows and the herd bull Mara Victor. You can buy them at your own price as every one will be sold. Write for catalog to CALVIN LOVETT & SONS, 1009 James St., Kalamazoo, Mich. AUCTIONEERS—Col. G. M. Isenhamer, Col. E. K. Conrad, Col. F. B. Lawrence.

AUCTION SALE OF REGISTERED PERCHERON HORSES



Wednesday, Nov. 10, '09,

At St. Johns, Mich.

4 Stallions and 11 Mares, all ages. Brilliant blood predominates; also 2 Standard bred Stallions, three and four years old; extra good ones. For description and breeding, address WM. BIRD & SONS, St. Johns, Michigan.

\$50.00 REWARD!

Stolen from barn of Frank Bradford, three miles east of Pontiac, Mich., on evening of October 19, 1909: One Dark Bay Mare, no white, 7 years old, weight 1200, trots on slow gait and paces on fast, scar on left front foot, in heel just above the hoof, caused by a stub. Extra long slim ears. One Black Brass Trimmer Single Harness, tan colored line. One Black Nickle Trimmer Single Harness. One Open Spindle Back, Red Gear, Black Body Buggy, gray cushion, solid rubber inch tires. One Plush Robe, black one side, and black and green on other. Mr. Bradford will pay \$25.00 for recovery of property, and I will pay \$25.00 for the arrest of guilty parties. Wire at my expense. CHAUNCEY A. HARRIS, Pontiac, Mich., Oct. 20, 1909. Sheriff.

BOWSER SWEEP MILLS



Different from all others. 4 or 2 horses. Grinds 10 to 15 tons of grain with 100 lbs. of Oats or Wheat. And all small grains including Oats and Wheat. (Also make 8 sizes belt mills.) D. N. P. Bowser Co., South Bend, Ind.

Pair of Young Bay Mares for Sale, weight 2,400 lbs. Will take one or two cheap light horses. J. W. SLATER, Traverse City, Mich.

PERCHERON STALLIONS. One 4 and one 2 years, record, ed. Shorthorn sires, both sex, reasonable prices. T. M. Southworth & Son, R. 13, Allen, Mich.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS.

Herd headed by UNULATA BLACKBIRD ITO 53836, one of the best sons of PRINCE ITO 50006, and Grand Champion Bull at the Detroit and Grand Rapids Fairs of 1907, 1908 and 1909. Herd consists of Erics, Blackbirds, Prides, etc. WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES—A Dairy Breed of much merit. Young stock for sale—also Berkshire Pigs, and ten varieties highbred Cockerels. Eggs in season. Mich. School for the Deaf, Flint.

Hereford Bulls 8 to 12 months old, best of blood. Individually right. Write, or come and see. E. J. TAYLOR, Fremont, Mich.

HOLSTEINS

Butterboy Ella De Kol No. 49509 is for Sale. Also three extra good bull calves, 5 yearling heifers, 8 good young cows. Must be sold before winter. L. E. CONNELL, Fayette, Ohio.

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

HIGH CLASS JERSEY BULLS. Cheap and Good.

Choice individuals. Island and St. Lambert breeding. Can satisfy the discriminating breeder or dairyman. Inspection invited. Full information cheerfully furnished. If you cannot visit our farm at once, write BROOKWATER FARM, Ann Arbor, Mich. A. W. MUMFORD, Manager.

Northern Grown Jerseys. ROYCROFT FARM, Sidaaw, Mich.



Pure St. Lambert JERSEYS and some nearly pure. CLARENCE BRISTOL, Fenton, Mich. R.F.D. No. 5.

JERSEY BULL CALF born Mar. 13, '09. 2nd calf of a heifer that gave 8224 lbs. of milk in 1 year; first calf as 2-year-old, fine individual. THE MURRAY-WATERMAN CO., R. 6, Ann Arbor, Mich.

LILLIE FARMSTEAD JERSEYS

We have some splendid young bulls for sale. Some of them are old enough for service. They are from cows with records of 300 to 425 pounds of butter last year. Write for description and prices. COLON C. LILLIE, Coopersville, Mich.

MARSTON FARM—JERSEY CATTLE. T. F. MARSTON, Bay City, Michigan.

DAIRYBRED Shorthorn Bull Calves For Sale. Also a few heifers, good notes as good as cash. (Citizens Telephone). J. B. Hummel, Mason, Mich.

HOLSTEINS—Registered bull calves for sale. A few extra good ones at \$75 each. I. M. SHORMAN, Fowlerville, Mich.

MAGNIFICENT yearling Holstein bull, A. R. O. backing both sides, none finer. Reasonable price. ROUGEMONT FARMS, Detroit, Mich.

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

HOLSTEIN FRIESIANs headed by Canary B. Rock cockerels. W. B. JONES, Oak Grove, Mich.

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Has more imported Holstein-Friesian Cows than any farm in the Middle West. Registered BULL CALVES of the most fashionable breeding. 30 fine, registered, Duroc Jersey sows due to farrow soon.

SHEEP.

COTTSWOLD, Hampshire, and Southdown Rams for sale from Grand Champion and Sweepstakes Flock, 1909, at Kalamazoo, Detroit, New York, Vermont, New Jersey. The Clover Blossom Farm, Fort Austin, Mich.

HAMPSHIREs—A few good yearling Rams and Ram Lambs. E. A. HARDY, Dorr, Mich.

HAMPSHIRE RAM LAMBS AND YEARLINGS. All registered. C. D. WOODBURY, Lansing, Michigan.

NATIONAL DELAINE RAMS FOR SALE. All stock registered. F. L. BROKAW, Eagle, Mich.

PARSONS OXFORDDOWNS. Hornless delaine, Black tops. ROMEYNC, PARSONS, Grand Ledge, Mich.

OXFORD RAMS & EWES bred by, and ewes bred to, imported prize-winning rams, for sale. Address either B. F. Miller, Flint, Mich., or Geo. L. Spillane, Flint, Mich.

OXFORD DOWN RAMS AND EWES. I. R. WATERBURY, Highland, Mich.

OXFORD DOWNS. A few good field rams for sale. H. J. De GARMO, R. No. 1, Clyde, Mich.

For Sale—5 A., 2 C. and 4 Franco Merino rams, also 5 Rambouillet rams. All choice stock. Will sell 20 Merino ewes, also 20 Rambouilllets. E. M. MOORE, Wixom, Mich.

Rockland Farm Delaines—A few choice rams for the 1909 trade. Prices right. D. E. TURNER & SONS, Mosherville, Mich.

Registered Rambouillet Rams for Sale. WILLARD HALL, R. J., Martin, Mich.

For Sale, Cheap. Choice Rambouillet rams & ewes. C. E. BURLINGAME, Byron, Mich.

FOR SALE—Registered Rambouilllets. 30 ewes and 42 ram lambs, THOS. FLETCHER & SON, Chelsea, Mich.

LORIMER KIPP, Breeder of registered Delaine sheep. High-class Rams for sale, shipped on approval. Rockford, Kent Co., Mich.

HIGH-CLASS Merinos & Delaines; ewes shear up to 24 lbs., rams to 30 lbs., large size, well covered. S. H. SANDERS, Ashtabula, Ohio.

REGISTERED Von Homeyer Rambouillet Rams at Farmer's Prices. Thos. Wyckoff, Rambouillet, U.S.A., Orchard Lake, Mich.

20 RAMBOUILLET RAMS (reg.) left at a bargain. J. Q. A. Cook, Morrice, Mich.

Log Cabin Farm has choice registered Rambouillet Sheep of both sex for sale at farmers' prices. Citizens Phone Augusta. Chas. F. Koster, Augusta, Mich.

Choice Shropshire Rams For Sale. A. E. BACON & SON, Prop's Sheridan, R. 10, Mich.

250 HEAD OF SORTED BREEDING EWES, mostly all black faces. Have not been bred yet. Price \$5 per head. J. B. GARDNER, Lock Box 437, Cadillac, Mich.

KOPE-KON FARM, Kinderhook, Mich., offers yearling ewes and bucks at prices you can afford to pay.

SUNNYSIDE SHROPSHIREs. Have left one 2-year old and two yearling rams of superior quality. Price \$40 each. H. C. CRAMTON, Metamora, Michigan.

SHROPSHIRE Rams. Also O. I. C. swine, spring farrowing, either sex, not akin, and imp. stock ram for sale. E. E. Beach & Son, R. 3, Brighton, Mich.

Shropshire Rams—Good ones from Imported and Canadian stock. Also eight ewes. Willis S. Meade, R. No. 3, Holly, Mich.

SHROPSHIRE CHOICE RAMS AND EWES. \$10 to \$16 each. C. J. THOMPSON, Rockford, Mich.

Shropshire ERDENHEIM FARM will make low prices on good Shropshire yearling Rams. Must be closed out. ROBERT GROVES, R. D. No. 3, Pontiac, Mich.

SHROPSHIRE HALL STOCK FARM.

Will make special prices for thirty days, on ewes from 1 to 3 years old, all bred to Imported Cooper, and Mausell rams to lamb in March and April, also on very choice ewe lambs, this is to make room for an importation that is going to arrive this spring. L. S. DUNHAM & SONS, Concord, Michigan.

HOGS.

BERKSHIREs. At the recent AMERICAN ROYAL LIVE STOCK SHOW Prime Bacon was Grand Champion Boar and Lady Nina 5th Grand Champion Sow; get of boar first to Longfellow's Duke get. A few boars ready for service, cheap. HUFF FARM, Birmingham, Mich.

LARGE ENGLISH BERKSHIREs.

Have a fine lot of spring pigs, both sexes. The type for profitable pork production. Vigorous and strong and of best blood lines. Satisfaction guaranteed.

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BERKSHIREs. Unexcelled in breeding. Selected boars, sows and gilts. Choice fall pigs. T. V. HICKS, R. No. 11, Battle Creek, Mich.

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BERKSHIREs of the most fashionable type and strains. C. S. BARTLETT, Pontiac, Mich.

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Two Boars, do for fall service. A few Glts left. Also a fine lot of fall pigs ready for weaning. Either sex or pairs no kin. A. A. PATULLO, Dockerville, Michigan.

Improved Chester. Choice pigs of March and April farrow, either sex. Also Holstein Cattle, a few cows and young bulls for sale. W. O. WILSON, Okemos, Mich. Both Phones

DAMS BROS. Improved Chester Whites, Litchfield, Mich., won 125 premiums in '09. Bookings orders for bred sows; boars ready for service. Buff Rock, W. Orpington, W. Leghorn cock'ls. Shorthorn bulls ready for service.

IMPROVED CHESTER WHITES. A fine lot of spring pigs, either sex, farrowed in March and April. Price \$15. Satisfaction guaranteed. Colon C. Lillie, Coopersville, Mich.

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DUROC JERSEYS. CAREY U. EDMONDS, Hastings, Mich.

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O. I. C. swine of spring farrow, both sexes. Some Aug. and Oct. pigs. All of right type and breeding. Geo. P. Andrews, Dansville, Ingham Co., Mich.

O. I. C's—50 HEAD of Fine Spring Pigs for Sale, either sex. Large, strong stock. OTTO B. SCHULZE, Nashville, Mich.

FOR O. I. C. boars and sows, bred to write John Berner & Son, Grand Ledge, Michigan.

FOR SALE—O. I. C's—2 extra good boars. Some choice pigs. Rose Comb Brown Leghorns, April hatch, standard bred, at prices that will move them. Satisfaction guaranteed. J. R. Inskeep, Holly, Mich.

Nov. 13 I will sell at including Imp. Spell and Merpha, the Grand Champions, at State Fair. Write for catalog. Have a few boars left at farmers' prices. WM. WAFFLE, Coldwater, Mich.

POLAND-CHINA BOARS—Big, western type, big litters, \$10 up. Shropshire Bucks, lambs \$10; yearlings \$15. J. C. BUTLER, Portland, Mich.

POLAND-CHINAS—Perfection strain. Choice young boars ready for use. Also sows. E. D. Bishop, R. 38, Lake Odessa, Mich.

POLAND-CHINAS. Long bodied, strong boned, spring pigs, both sex, at low prices. Send for snap-shot photo. Robert Neve, Pierson, Mich.

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LARGE IMPROVED YORKSHIREs—Young boars ready for service. \$18. Young sows bred to farrow next spring \$25. Fall pigs either sex \$10. Satisfaction guaranteed. If you want the most economical feeders possible, breed your sows to a Yorkshire boar. Yorkshires are sure to be the most popular breed of the future. COLON C. LILLIE, Coopersville, Mich.

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VETERINARY

CONDUCTED BY DR. W. C. FAIR,
CLEVELAND OHIO.

Advice thru 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 some one else.

Bog Spavin.—I have a heavy horse that I drove 30 miles in a day about a week ago; the next morning the hock was swollen and tender. The injury appears to make him lame when first moved, but the lameness lessens after he has some exercise. J. W. T. Flint, Mich.—During the journey your horse has perhaps slipped and sprained the hock joint which, of course, is the commencement of a bog spavin. Give him rest and apply a light blister, using cerate of cantharides or use any of the blisters that are regularly advertised in this paper, and he will recover.

Chronic Lymphangitis.—I have a gelding seven years old that had an attack of lymphangitis about a year ago and he has never fully recovered from it. J. J. Bailey, Mich.—A chronic ailment of this kind is benefited by good care, regular exercise, moderate and not over feeding on grain, keeping the bowels open and keeping the animal in not too high flesh and giving him daily exercise and when the horse is idle should be fed sparingly on grain. After exercising, bandage over cotton, leaving bandage on two hours, then take it off; also give one dram iodide potassium once a day for 30 days.

Acidity of Stomach.—Several of my cattle are inclined to chew and gnaw on wood, therefore I would like to know what ails them? R. J. Coopersville, Mich.—Your cattle suffer from acidity of stomach, which, when corrected, they will discontinue chewing wood. Give each cow 1 oz. bicarbonate soda, 1 oz. powdered charcoal and 1/2 oz. ground ginger at a dose in feed twice a day.

Surfeit.—I have a 5-year-old mare that is troubled with small pimples on skin. These little bunches raise up and suppurate, then a scab forms which afterwards peels off, taking some of the hair. She does not appear sick and eats well, but rubs and bites herself. I have treated her some, but her condition does not change. E. M. H., Grand Rapids, Mich.—Your mare is troubled with surfeit; perhaps you are feeding her a little too much grain for the amount of exercise she has. Give 1 dr. Donovan's solution, 1 oz. bicarbonate soda and 1/2 oz. powdered charcoal at a dose in feed two or three times a day. Feed less grain and more vegetables and if the skin is inclined to continue itching, dissolve 1 oz. baking soda in 3 pints water and wet the itching parts two or three times a day.

Chronic Cough.—Seven-year-old mare has a dry, hacking cough, which she has been troubled with for past few months. I wet her hay and take good care of her, but she does not get over the cough. Subscriber.—It is easier to say that chronic cough can be cured than to do it; however, if you will give her 20 grs. calomel, 1/2 dr. powdered digitalis, 1/2 dr. camphor and 1/2 dr. powdered opium at a dose in feed, or as a bolus, once a day it will help correct the cough.

Feeding 5-months-old Colt.—I have a colt 5 months old that I am anxious to grow up evenly; therefore, you will oblige me by stating how he should be fed and managed to keep him from becoming stunted. What grain had I better feed to produce both bone and muscle; also, should grain be fed whole or ground? I am feeding at present 2 qts. ground oats at a meal three times a day; also feeding two or three bran mashes weekly. He has very little thirst. J. B. U., Clio, Mich.—Feed the colt two quarts whole oats and one quart dry bran at a feed; give some vegetables; salt his feed as this will increase his thirst; he will drink more water and it will open the bowels. Also feed mixed hay, corn fodder and some straw. Every colt should have some vegetables during the winter. If your colt is growthy feed him all the grain and well-cured fodder he will eat, but be sure and exercise him daily.

Drying up Cows—Warts on Teats.—Advise me how to dry up two cows in order that they may soon commence to fatten. They give five quarts of milk daily and are healthy. I also have a young cow whose teats are covered with warts and I would like to know what will remove them. F. J. S., Brant, Mich.—Feed timothy hay and straw, stint their water allowance, milk them once daily, not stripping very clean. This is better than to rely on drugs, such as camphor and cathartics. If warts are supposed to be caused by too high feeding, the quantity of nutritious food should be cut down and a cathartic of epsom salts or castor oil given. However, this is not often the case in cows. If the wart has a constricted neck, cut it off, but if flat apply one part arsenic in eight or ten parts lard carefully twice a week, or apply one part salicylic acid in three parts lard daily.

Enlarged Leg.—Six-months-old colt was hurt while playing in pasture one year ago last August. Injury is above hock joint on inside of leg. It caused a bunch which broke open and discharged pus for some two months and has left a large bunch on each side of leg just above hock. I would like to have leg reduced to its normal size if possible. He was treated by our local Vet. but his remedies seem to fail to reduce the swelling. S. M., Sparta, Mich.—You will find it rather tedious work reducing fibrous bunches of this kind. However, repeated applications of one part red iodine mercury in eight parts lard will produce as

(Continued on page 393).

Live-Stock Dividends

Why don't you, Mr. Enterprising Stock Feeder, earn a larger profit per-centage on your fat cattle? There's just one thing necessary in your system—you select good steers, give good care and sound grain, but perhaps you leave nature, *unassisted*, to do the rest. If you'll think, you'll realize that no animal can consume such a grain-feed as you give, day after day, without digestive disturbance. *You must, therefore, fit the animal to stand heavy feeding, and that's best done by giving, morning and night, a small portion of*

DR HESS STOCK FOOD

in the grain ration. This is called by feeders "The Dr. Hess Idea," and thousands can testify that it pays big dividends on a small outlay. Dr. Hess Stock Food is a tonic. It sharpens the appetite and leaves the animal always ready to eat. It makes the digestive apparatus strong so there is no danger of overloading. It assists every organ to perform its function and it prevents and cures minor stock ailments. Dr. Hess Stock Food pays at the milk pail, in the horse stable and in the pig house. All farm animals are the better for it. Fed twice a day in small doses. Sold on a written guarantee.

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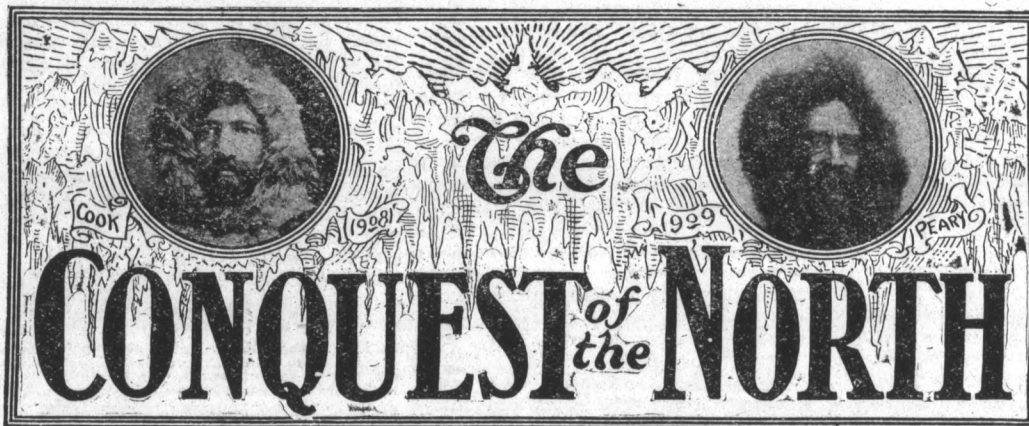
DR. HESS POULTRY PAN-A-CE-A

Give it to the growing chicks in the springtime; to the moulting fowls in the fall and to your laying stock the whole year round. It helps the chicks and hens to digest more of their food and so grow faster and lay better. A little Poultry Pan-a-ce-a once a day in soft feed spells the difference between a little and a great deal, in the hen business. A penny's worth feeds 30 fowls one day. Sold on a written guarantee.

1 1/2 lbs. 25c., mail or express, 40c; 5 lbs. 60c; 12 lbs. \$1.25; 25 lb. pail \$2.50.

Except in Canada and extreme West and South. Send 2c for Dr. Hess 48-page Poultry Book, free.

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BY

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Two daring American explorers, within one week, communicated to the civilized world startling stories of discovery. This book contains authentic condensations of these stories carefully written by Mr. Ernest Ingersoll, an author of many well known works. Mr. Ingersoll has also written for this work biographies of both explorers, and a scholarly history of Arctic discoveries, in which latter is included a serviceable account of all explorations in the North from the earliest to the latest expeditions.

The work contains over forty beautiful half-tone illustrations made from the latest photographs available. Among these illustrations are excellent portraits of the explorers and their families, the vessels on which the respective journeys to and from the Arctic regions were made, and numerous scenes in the Far North, including views showing members of both the Cook and Peary parties. The maps show the routes of the earlier explorers, as well as those of these later expeditions, and exhibit much important data not given in any similar publication. The American people are justly proud of the achievements of these heroes and their interest in this publication is assured. Orders will be filled in the sequence received.

The book contains forty-eight pages beautifully printed on enameled book paper of high grade. The cover is of strong paper with ornamental design on first page, and maps in colors on the second and third pages.

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50 Carefully Selected SHORTHORNS.
For catalogue write B. O. Cowan, Asst. Secy., American Shorthorn Assn., U. S. Yards, Chicago.

Thursday, Dec. 2nd, 1 P. M.
50 Best Galloways from herd of N. P. Clarke and others. For catalogue write R. W. Brown, Secy., Galloway Assn., U. S. Yards, Chicago.

Friday, Dec. 3rd, 1 P. M.
50 Carefully Selected ABERDEEN-ANGUS.
For catalogue write Chas. Gray, Secy., Aberdeen-Angus Assn., U. S. Yards, Chicago.

Thursday, Dec. 2nd, 1 P. M.
100 CHOICE SHETLANDS

Sale to be held under the auspices of the Shetland Pony Club and in the Dexter Park Pavilion, south of Exposition grounds. For catalogue write Mortimer Levering, Secy., American Shetland Pony Club, Lafayette, Ind.

RAMBOUILLET SALE
Tuesday, Nov. 30th.

For catalogue write Dwight Lincoln, Secy., Milford Center, Ohio.

SHROPSHIRE SALE
Wednesday, Dec. 1st, 1 P. M.

For catalogue write Mortimer Levering, Secy., Lafayette, Ind.

HAMPSHIRE SALE
Thursday, Dec. 2nd, 1 P. M.

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THE DAIRY

CONDUCTED BY COLON C. LILLIE.

CARE AND ECONOMY IN FEEDS AND FEEDING.

As we have reached the beginning of another so-called feeding season, as applied to the dairy farmer and are facing a period of "top-notch" prices for all kinds of animal feed stuffs, it seems fitting, at this time, and important, that every feeder should "search" himself for all the available and helpful information within his grasp.

In order to buy or feed understandingly and economically, we must know both the nature of the various feeds obtainable and their nourishing power or feed nutrients, as well as the price.

The market prices are seldom based on their contents or nourishment value, therefore the feeder is often misled. A ton of corn meal contains 1,578 lbs. of digestible nutrients, 158 lbs. of which is protein, and at 75 cents per bushel, or \$28.82 per ton, costs 1.602 cents per lb. of equalized nutrients. Cottonseed meal contains 1,250 lbs. nutrients, 744 lbs. of which are protein, and at \$31.00 per ton, shows a nutritive cost of 1.655 cents. Gluten feed has 1,456 lbs. nutrients, including 400 lbs. protein, and at \$30.00 per ton costs 1.668 cents. Bran, which is the lightest, both in point of bulk and nutrients, contains only 1,076 lbs. digestible nutrients, 244 lbs. being protein, and at \$27.00 per ton costs 2.061 cents. While oats at 45 cents per bushel, or meal at \$30.13 per ton carries 1,214 lbs. digestible feed nutrients, 184 lbs. being protein and costs, on the same equalized basis, 2.101 cents per nutritive pound.

Thus it will be seen that corn, even at 75 cents, is the cheapest producer herein mentioned, tho largely carbohydrates, while bran and oats are the dearest, costing fully \$6.00 and \$7.00 respectively more per ton than their contents indicates or warrants, and relatively more than either corn meal or a mixture composed of equal parts of corn meal, ear corn meal, cottonseed meal, distillers' dry grain, and gluten feed, and carrying 374 lbs. digestible protein, 944 lbs. carbohydrates and 120 lbs. fat per ton.

This rich and palatable mixture constitutes a well balanced dairy ration when fed in connection with corn silage, corn stover, millet, timothy, mixed hay, etc., and shows a feeding ton value at this time of \$28.90, while on the same relative basis bran and oats show a value of only \$20.90 and \$22.90.

Mind you, I am not condemning bran and oats. Everyone knows they are both excellent feeds, but the market prices are out of line with other feeds, when their nutritive contents are considered, and have been for three years or more.

Success in dairying under present conditions depend largely upon the care and economy practiced in buying feeds and in feeding.

To explain the term "equalized" as used above, will say that in order to reach a reliable unit of nutritive cost, some form of equalization must be employed, therefore in my feed table I multiply the known pounds of protein by 165, carbohydrates by 104, and fat by 175 which, together makes the total extended or equalized pounds of digestible nutrients in one ton of each feed listed, divide the ton cost by the total extended pounds, and the result is the cost of nutrients per pound. This I consider practical and reliable, as the units of 165, 104 and 175 represents the relative cost of the three feed nutrients, when computed on the ton price.

Again, to make plain a ton of corn meal contains, by standard analysis, 158 lbs. protein, 1,334 lbs. carbohydrates and 86 lbs. fat, making a total of 1,578 lbs. digestible nutrients, and by multiplying these individual nutrients by 165, 104 and 175, you get 1,799 as the total pounds of equalized nutrients, and by dividing the ton price, which in this case is \$28.82, including \$2.00 for grinding, by 1,799 the answer is 1.602 cents as the cost per pound of feed nutrients, or actual available nourishment in corn meal at \$28.82 per ton, which is equal to 75 cents per bushel. One hundred and ninety-three pounds good clover, or clover and timothy hay, contains 100 lbs. digestible equalized nutrients, and at \$10.00 per ton would cost 96.4 cents as against about \$1.60 in corn meal, cottonseed meal, distillers' dry grain, and the above mixture, and \$2.06 in bran and \$2.10 in oat meal.

In quoting the guaranteed analysis of

feeds as required by law, the manufacturer invariably names the crude and not the digestible portion, which is misleading and of but little use to the consumer, hence should be considered with caution.

Kent Co.

B. W. PUTNAM.

SOME REQUISITES IN PRODUCING MARKET MILK.

No man should attempt to produce market milk unless he has an equipment commensurate with the needs of the business. By this I do not mean anything expensive, but a stable with good ventilation, kept scrupulously clean and built on sanitary principles.

He should have a farm that will produce an abundance of alfalfa, clover or mixed hay and corn ensilage and such grain foods as corn, oats, peas and barley, or else situated where he can make a profit from growing some highly organized market or truck crop in his crop rotations that will sell for sufficient cash to go a long ways toward paying his feed bills.

We cannot figure the increased fertility brot on to the farm thru the feeding of purchased grain foods as a valuable asset, unless we shape our methods of farm management so that we may turn it to profit. The common system of growing more feed, to feed more cows, to eat more grain, to make more manure does not appeal to the successful business farmer unless he can see direct money profit in the end.

Unless a system of growing ensilage and soiling crops is being practiced, good pastures are a necessity on the farm where market milk is being produced, for the man who is supplying a certain amount of milk every day in the year is compelled to adopt every method that will maintain a maximum flow of milk during the unfavorable seasons of the year.

Good, clear, fresh water is indispensable, both as a source of supply for the dairy herd and for the care and handling of the milk and washing the utensils used in the dairy. Every market milk dairy needs to have a room to which the milk should be taken as fast as it is drawn from the cow and properly cooled as rapidly as possible. This does not need to be an expensive room or house, but should be situated where it will be free from all contaminating odors that will have a tendency to taint the milk.

Care of the Milk.

A liberal supply of good cold water is essential in the milk room and unless the water is sufficiently cool to reduce the temperature of the milk to at least 45 degrees within one-half hour after it is drawn from the cow, it will be necessary to have a supply of ice.

Of all the care that is given milk, that which is given the first half hour after it is drawn from the cow avails the most. We formerly used an aerator in our dairy room, but during the past two years have had better success by simply cooling it in the cans that are placed in running water after they are filled and the milk stirred frequently until properly cooled and ready for shipment. Some men find that an aerator is an advantage but I find that it does just the opposite from what I believe is proper in handling milk, i. e., exposes the milk to numberless bacteria in the air while it is being run over its surface. If the milk is placed in the cans and properly stirred and cooled, there should be little difficulty in having it arrive in the city in good condition. Every utensil should be kept scrupulously clean and the water used in cleaning them should be fresh and clean.

I might write pages of good advice about producing good milk for the city trade, but I am speaking for the common producer of market milk. We have many articles on sanitary milk and certified milk, but when we try to produce such milk the increased cost of production puts the product out of reach of the common people, who form the larger portion of the trade we are to supply.

New York. W. MILTON KELLY.

FOURTH NATIONAL DAIRY SHOW.

(Continued from last week.)

The forces working in the different organizations connected with the dairy industry, and crystallized in the great Dairy Show that has just completed its greatest annual exhibition, all point to the final accomplishment of such an organization as that of the International at Chicago. The strengthening of the exposition along the line of benefiting the dairy farmer,

the interesting of the dairy-products manufacturer, and the luxurious manner in which the dairy machinery men took hold of the enterprise, give added force to the prophecy that in a short time this organization will be handling an enterprise that will rival the Chicago show which has now a world-wide reputation. The present management is largely responsible for the important position that has been attained, but it must not be lost sight of that the preaching of better dairy products thru the press of the country has incited the attention of the public upon the source of these foods and given it an interest that is peculiar but serviceable in working out this purpose of the American dairyman. That interest makes it not impossible to get the city folks interested, as well as the producers, in a good show. This, Milwaukee people proved to be a present fact.

At the anti-oleomargarine banquet, held at the Pfister House, Milwaukee, on Wednesday evening, October 20, Ex-Gov. Hoard, of Wisconsin, the grandest old Roman among dairymen today, stated that he thanked God that he had been permitted to live to see the Fourth National Dairy Show. It is well understood that Governor Hoard has labored long and zealously to bring about the union of the allied forces of dairying in just such an organization as was there convened, and just such an exhibit of the resources of the industry as the organization had collected. He has for years maintained that the great dairy industry which produces over \$800,000,000 every year should have an annual exposition for the purpose of arousing enthusiasm among the allied interests and for the purpose of protection. In organization there is strength, and Governor Hoard, better than most men connected with the dairy industry, realizes the importance of organization, strong and complete, backed by enthusiasm, to fight the problems of the dairymen. He talked earnestly and zealously for butter and dairy products as against oleomargarine and fraud. He saw here in the Fourth National Dairy Show the culmination of his fondest hopes, a worthy and a successful exposition of the dairy products of this country. It was a proud moment of his life, and this sentiment from Governor Hoard conveys, more than any pen description of the Show, a general idea of its nature and its success.

Between 500 and 600 of the best dairy cattle of this country were on exhibition and the great basement in the new auditorium was filled full, and all realized that, if a building in the future could be built large enough to hold it, an exhibition of dairy products and stock could be held just as well as the exhibition of fat stock at the International. There need be very little, if any, other attraction, but the other products, together with dairy cattle, make a big exhibition, and no other industry in the country can place before the people a more magnificent industrial display than the dairy industry when once aroused.

The entire available space in the great auditorium on the first floor was occupied by dairy machinery and dairy supplies. Almost every firm of note in the whole country exhibited their products and they were well patronized. Many a business man of the city of Milwaukee gazed in wonder and astonishment upon the exhibition. They never before realized how much there was to the industry.

The exhibition of cheese numbered over 300 entries. An interesting exposition might be made of cheese and butter alone, which would be worthy of the patronage of the people of any community. In the cheese exhibit, Michigan need feel proud of the part that she took. Not only were a great many cheese factories in Michigan represented, but Governor Warner captured the first prize in the class of American cheese, denominated soft. The American cheese were divided into cheddar, and soft cheddar, the latter class being distinctly a Michigan type, and in this class Governor Warner took first prize.

In butter there was over 500 entries. Very little of the great exhibition could be shown in the auditorium on account of proper room to keep it. Butter is a valuable product and deteriorates when it is not kept in proper temperature and the exhibitors of butter would not consent to have it removed to the auditorium where this year it could not be properly protected against the temperature and against contaminating odors.

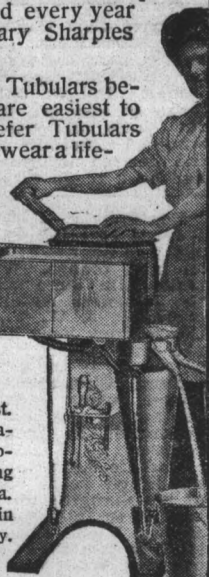
At the National Dairy Farmers' Meeting, held on Tuesday, the 19th, President Lillie, of the Dairy Show Association called the meeting to order, stating that it seemed to be his duty as there was no permanent organization of National Dairy Farmers. He recommended that before

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the close of the meeting an organization be perfected. Governor Warner, who was chairman of the forenoon session appointed N. P. Hull, of Michigan, Prof. Humphrey, of Wisconsin, and Prof. T. L. Haecker, of Minnesota, as a committee on resolutions. When this committee reported later in the day they recommended a permanent organization of the American Dairy Farmers, and accordingly N. P. Hull, of Michigan, was elected president, Mr. Helmer Rabild, of the Dairy Division of the Department of Agriculture was elected secretary and treasurer, and a board of five directors was elected, composed of Prof. Merrill, of Maine, Prof. Hills, of Vermont, Prof. Oscar Erf, of Ohio, and Prof. Humphrey, of Wisconsin. The board of directors were given power to draft by-laws and constitution, and complete the organization. On motion the next meeting of the American Dairy Farmers' Association was fixed at the time and place of the next National Dairy Show Association.

Heretofore the officers of the National Dairy Show Association have had complete charge of Dairy Farmers' Day and each year the interest in this has been increasing, but the time is now at hand when the American dairy farmers should have an organization of their own. Under the management of the present officers and board of directors, there is no question but what this association will become one of the strongest organizations among dairymen in the United States and this organization will relieve the managers of the National Dairy Show of much work and responsibility. This association will now meet with the National Dairy Show Association on the same footing as the National Creamery Buttermakers' Association and National Cheesemakers' Association and all other allied associations. A new feature of dairy farmers' day was the banquet held on the evening of the 19th in the auditorium cafe. Over 200 dairy farmers sat down to a sumptuous repast. Ex-Governor Hoard, of Wisconsin, acted as toastmaster, Governor Warner, of Michigan, and many of the best dairy instructors and successful dairy farmers of the country responded to toasts. It was indeed a love feast and all present expressed themselves as well pleased. An orchestra and vocal music in the form of solos by Miss Anna Woodward and Prof. Hohn, were attractions that added to the enjoyment of the banquet.

Finances.

Complete returns show that the receipts were enough to pay the expenditures and have a small surplus left to begin operations for another year. This places the Dairy Show beyond the experimental stage and assures a successful future. The magnitude of the Show in the future will be limited only by the building which can be secured in which to hold it. The probability is that within a few years the Association will have to build its own building especially adapted to its needs in some centrally located city of the United States.

Cow Testing Demonstration.

One of the most attractive features, if not the most attractive feature in connection with the last Dairy Show was the demonstration in cow testing work conducted under the auspices of the dairy division of the department of agriculture, Mr. Helmer Rabild having immediate charge. Dr. Kletch, of the nutrition milk farm near Milwaukee, donated the cows from his herd, 16 in number, for the demonstration. Mr. Rabild divided these 16 cows into four different groups, four in a group. One group was fed the ration they had been in the habit of having on the farm. Another group was fed according to the Wolf-Lemen standard, and the other two groups were fed according to Prof. Haecker's standard of Minnesota. A large card over each cow stall gave very interesting data. They first gave the name of the cow, her age, the time when she freshened, then the amount of milk she gave each day, the amount of butter-fat in the milk, and the ration, both roughage and grain, the value of this ration, the value of the butter-fat at market prices and the profit or loss resulting. Then, in the final column was given the amount received for each dollar's worth of feed fed the cows. Besides this, a specially constructed box contained the ration fed each group of cows. In the bottom was the amount of corn silage and the amount of corn fodder fed, above this was a rack containing the amount of mixed hay fed, and then on top of the box in glass jars the amount and kinds of grain used in compounding the ration. Besides this, were also little jars containing the butter produced from this ration by each of the cows. In all,

it was the most interesting feeding experiment ever conducted in this country. Bleacher seats were erected behind the cows that would hold perhaps 150 people. Every afternoon and every evening talks were given by such men as N. P. Hull, of Michigan, Ex-Gov. Hoard, of Wisconsin, Prof. T. L. Haecker, of Minnesota, Mr. Rabild, Colon C. Lillie, and others, not only explaining the nature of the exhibition but also giving talks on feeding and on testing cows. At every one of these lectures the bleacher seats were crowded and many times people stood up on either side for a considerable distance and it is estimated that many times as many as 250 or 300 people listened to the lectures. The cows were all milked by the milking machine. In the afternoon the milking was done at four o'clock, and at this time also the bleacher seats and the space near them was nearly every day crowded with people who were anxious to see the machines in actual operation. In every instance the philosophy of the milking machines was carefully explained by some one qualified to give this information.

This work really exemplified the work of the co-operative cow testing associations, simply keeping a debit and credit account with each cow in the herd, charging her with what she consumed at market prices and giving her credit for what she produced at market prices. It is very interesting to know that in each group there were one or two cows that barely paid expenses and in two of the groups, each had a cow that actually lost the owner money, while in one of the groups a cow produced \$2.20 for every dollar's worth of feed which she was fed. The majority of the cows paid a fair profit. In selecting these cows no attempt was made to get the best or the poorest. The idea was to get an average lot of grade cows so that the farmer could see conditions which were liable to exist in his own herd. No such educational work as this has been attempted before at a Dairy Show, or any other show. The nearest that comes to it is the annual demonstrations at the Michigan State Fair and West Michigan State Fair where for a short period a competitive test is made practically on the same basis, where of those we know that cannot be economical production is made the basis for premiums. All farmers are coming to think now along the lines of economical production. It is not the cow that gives the largest yield in a given time, but the cow that will take a dollar's worth of feed and make the greatest profit out of it that is the best cow.

Creamery and Cheese Factory.

The working creamery and cheese factory were also live issues and attracted a great deal of attention. Every day in the cheese factory when the curd was ready to go thru the curd milk, the vat was surrounded by a very interested audience. Many people had never seen cheese made before. They knew nothing about the process whatever, and besides they were all interested in the cheese curd, much of it being eaten out of hand. The experience of this year with the cheese factory demonstrates to the management of the fair that next year, instead of having one large vat so as to make one batch of cheese, there should be several smaller vats having the milk in different stages of development so that visitors can see oftener the process of cheese making, making a fewer number of cheese. Then seats could be provided for the people the same as were provided in the cow demonstration exhibition, and lectures should be given at stated times about cheese making. It is wonderful to note the interest that people have in things of this sort. Ordinarily, one would think that there would be no interest manifest in the ordinary making of cheese, yet thousands of people, many of them farmers who do not live in cheese districts are much interested and would stand for half an hour and listen to an intelligent talk upon the process of cheese making.

The same principle will hold true with the creamery. People want some one to tell them about the cream ripener, how it is used to control the temperature of cream; about the pasteurizer and why the pasteurizing is done. They are even interested in having some one explain the philosophy of the centrifugal separator, as old a machine as that is, and then the process of churning, the incorporation of moisture, the combined churn and butter worker and all of these details in actual creamery work are more interesting to the average visitor to the Dairy Show than the management ever realized and there is no question but what in the future this will be one of the features of the exhibition.

NATIONAL DAIRY SHOW DE LAVAL BUTTER AWARD TRIUMPH AS USUAL

The great NATIONAL DAIRY SHOW was held at Milwaukee, Wis., October 15-24, and in keeping with the invariable result since "ALPHA-DISC" DE LAVAL CREAM SEPARATORS went into use all the HIGHEST BUTTER and CREAM awards went to DE LAVAL users, in this latest representative contest, which included the exhibits of nearly one thousand of the best butter and cream producers throughout the country.

The three highest awards in the CREAMERY BUTTER class—all to DE LAVAL users—were as follows:

A. J. ANDERSON, Otisco, Minn.,	Score 97
THOR. MOE, Winthrop, Minn.,	Score 96½
A. L. OESTRICH, Watertown, Wisc.,	Score 96

The highest award on DAIRY BUTTER was to P. Daingaard, Camp Point, Ill.—Score 94½—a DE LAVAL user.

The highest award in the CERTIFIED CREAM contest was to G. Van B. Roberts, Highland, N. Y.—Score 99—a DE LAVAL user.

The highest award in the CREAMERY PATRONS contest for hand separator cream was to G. B. Fisher, Viroqua, Wis.—Score 93½—a DE LAVAL user.

Full details of all the entries and scores have not yet been made public, but there is no doubt that the vast majority of all exhibits scoring 90 and above will prove to have been DE LAVAL made, as heretofore.

Incomplete reports have been received of highest butter awards at the various STATE FAIRS this year, but practically all of them have been to DE LAVAL users, including particularly New York, Indiana, Michigan, Missouri, North Dakota and South Dakota.

As has been said before, the separator does not of itself insure the making of the best butter, but the superior mechanical and sanitary bowl construction and low speed of the DE LAVAL separator indisputably enable the production of better cream and better butter under the same conditions than can possibly be made in any other way.

This is something that even the most enterprising and resourceful of those who seek profit through the manufacture and sale of would-be competing separators never attempt to explain or deny,—that practically all the best butter, as evidenced by the highest awards in all representative butter contests, is and has for more than twenty years been made by users of DE LAVAL cream separators.

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With due respect to the many good farm papers printed, it is but fair to say that the Michigan Farmer is a pioneer in its field and has long been the recognized leader of the agricultural press for the territory which it covers, its leadership being maintained by giving its readers the best paper to be had at any price and the lowering of this price as its circulation and prestige has increased, until today it is being furnished at a price per copy much lower than even the small monthly or semi-monthly paper.

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Our program for next year will include matter which no good farmer can afford to miss, and which in book form would make a complete agricultural library worth many dollars. The reader will get more than "value received" for his investment.

CURRENT COMMENT.

The Business End of this issue will be found an article under the head of "Does Farming Pay," in which the writer draws a picture of agricultural conditions as he has found them after a journey of 60 years along this much traveled route.

Granting that farming is not as profitable a business as it should be for the average person engaged in it and that the picture drawn by this writer is a true representation of conditions to be found in every neighborhood, yet it does not follow that the trouble is altogether with the business of farming.

While there are, perhaps, fewer notable successes in agriculture than in any other line of business, there are also fewer total failures. There are successes and failures in every line of business, but the great majority of men in all these different lines "traveled the route" without attaining a degree of material success which would prove much of an inspiration to others who contemplate engaging in the same line of business, yet the brilliant exceptions found in men who have gotten outside of the beaten track to an extent which has made their success notable, whether in agriculture or any other line of business, demonstrates that after all, success or failure lies largely with the man rather than the business which he follows. That the business methods employed on the average farm are not the best we believe will be generally admitted. In the matter of economy, the saving of time, material and the products of the farm, less attention is paid on the average farm than in any other kind of business. While the farmers are the largest buyers and sellers of any class in the country, yet they are not, generally speaking, as expert or careful purchasers or salesmen as are engaged in other lines of commercial effort.

The true remedy for this condition, as in other lines of business, is organization, but much can be accomplished along this line by the individual farmer and it is our purpose to devote considerable space and attention during the coming season to a discussion of this topic, of "The Business End of Farming," for the benefit of our readers who have a worthy ambition to better their financial condition thru the employment of better business methods.

Subscribers frequently ask us to tell them how to stop the Paper. to proceed to avoid paying for papers which keep on coming to their address after the date to which they have subscribed has passed. This is a simple matter. It is only necessary to refuse to take the paper from the postoffice and notify the postmaster to notify the publishers that you do not want the paper. Such action releases the unwilling recipient of a paper from all responsibility so far as payment is concerned, from and after the date on which it is taken. But the necessity of such action may be avoided by subscribing only for such papers as stop sending them upon the expiration of the subscription. The Michigan Farmer publishes in each issue a guaranty to stop sending the paper on the expiration of the time subscribed for, and does not attempt to compel the reader to take or pay for it longer than he wants it. The person who includes only such publications as follow a similar policy, in making up his list of reading matter, will avoid trouble of this nature.

In the magazine Our Young Men's section of this issue we are inaugurating a Young Men's Column.

calculated to be of interest and value to the young man on the farm who has not had the advantage of college life and associations or the experience gained from contact with people outside his own neighborhood, either socially or in a business way. In this column, which will appear in our magazine section twice each month, we aim to give timely hints on the art of dressing well, including the selection and buying of clothing and furnishings, such as shirts, ties, hats, shoes, etc. We shall also endeavor to give our young men readers valuable information and suggestions in regard to personal etiquette, and the art of making themselves agreeable to their companions in company and at home. Not that we consider the country young man to be behind his city cousin in this respect, for in a great many cases he is already their superior in the latter respect, at least, but what young man has not felt ill at ease or self-conscious in company or wished that he might deport himself with the easy air shown by his cultured elders? In supplying our

young men readers with the information which will enable them to not only get the value of their investment in the clothing which they buy, which to most of them is an essential economy, but as well to wear them in an easy and natural way and to make themselves generally agreeable and consequently popular and sought after in the younger set of their acquaintance we feel that we will be filling a long-felt want. In order to make this department of the greatest possible value to this class of readers, we shall be glad to have any of our young men readers ask questions pertaining to the subjects above outlined and we will have them answered by a competent authority. In fact, we want to make this department of the greatest possible value to our young men readers from the start, and will be glad to broaden its scope to meet their needs.



Frank L. Collins.

Mr. Collins is the field representative of the Subscription Department of the Michigan Farmer. In his journeys about the state he will come in contact with a large number of the active subscription agents and many of the readers of the Michigan Farmer, who will find him as agreeable and ready to serve them as he looks.

AGENTS, ATTENTION.

We want to be represented at every Farmers' Institute held in Michigan. We must depend largely on our agents and friends to do this and desire that those who can do it, advise us at once if they will look after subscription work at the institute held in their vicinity. With the large list of free premiums and the liberal way in which we are paying our solicitors this year, subscriptions can be easily secured and good wages made. Write us.

THE MICHIGAN FARMER.

AGENTS' TERMS FOR 1909-1910.

Our agents' terms for the season's subscription campaign of 1909 and 1910, are now being mailed to all agents who have sent orders the past year. Should there be any such who have not received them or any who would like to start to raise a club and make money if they will write us, a complete lot of supplies will be sent free.

SUBSCRIPTION SEASON OF 1909-1910 IS HERE.

We will send the Michigan Farmer the rest of the year free, with all new 1, 3 or 5 year subscriptions, that is all orders received from this date will begin the week order is received and date from January 1, 1910. Altho many publications are advancing their subscription price, the Michigan Farmer will continue to publish the best farm paper in the world at 75 cents for one year, (52 issues), \$1.50 for 3 years, (156 issues), and \$2.00 for 5 years, (260 issues), and the rest of the year thrown in for good measure.

Three years to one person for \$1.50 gives a year free and saves remitting expenses and the trouble connected with it, and 5 years for \$2.00 is a still better proposition. In addition to the very low price, we are offering a choice lot of articles free, from a list of 50 or more, with each subscription.

These articles are offered free with the paper to stimulate effort and as a means of advertising the Michigan Farmer. The free premiums are offered the same for new subscriptions and renewals. The list

HAPPENINGS OF THE WEEK.

Foreign.

Thruout Europe there is political unrest as was shown by the numerous meetings of socialists on the last day of October, when audiences were set wild by eulogies on the life work of the recently executed educator of Spain, Professor Ferrer. It is the opinion of students of conditions there that the present excitement will result in a general revolution that in all probability will spread to every country of the continent.

King Menelik, of Abyssinia, who has been ill for some time is fast sinking and the report is that he has but little time to live.

Mrs. Theodore Roosevelt, her sister, and daughter, Ethel, were sight-seeing in Rome early this week. They anticipate that the hunting trip of Colonel Roosevelt will be cut short from the schedule.

The presence of four British warships in Greek waters has had a quieting effect upon the revolution that recently resulted in a clash between the rebels and government forces in that section and for the time being everybody is orderly.

Rioters in Korea have been put down by the troops. It is presumed that the rioting is the result of the crime against the Japanese Prince Ito, who was held by the Koreans to have been oppressive when he had control of the country after Japanese acquisition following the Russian-Japanese war.

The body of Prince Ito, who was assassinated in Manchuria last week by a Korean, arrived in Japan Sunday morning.

While making speed tests with an electric car in France, six persons were killed and a dozen injured by the car running away and plunging into a deep ravine.

The supreme court of Austria has ruled that cremation, as a method of disposing of corpses, is illegal.

King Edward is about to honor Herbert Gladstone, son of the late William E. Gladstone, with the title of governor of South Africa.

According to the report of the chancellor of exchequer of Great Britain, the consumption of liquor in Ireland has decreased by 70 per cent and in Scotland by 40 per cent. These figures are determined by the revenue collected from the manufacture and sale of the products.

The French people appear to be the only nation where the death rate is in excess of the birth rate. During the past six months for which the record have just been completed, there was a greater number of deaths by 28,205 than births. In 1908 there was a discrepancy of 10,308. This increasing margin is raising a cry of alarm for the future of the race.

The situation in Nicaragua is still very unsettled. Travelers who have arrived in this country since the rebellion began state that the reports sent out heretofore have been much exaggerated and that the rebels have not accomplished as much as was stated. Their reasons for rebelling against the autocratic rule of President Zelaya are well founded, since the executive has not hesitated to turn bonds and other public documents of value into personality for his own use.

An open fight has been started in France to defend the church against the state. A campaign for getting the proposition of a public school system to displace the educational institutions supported by the church, which was voted in favor of the republicans two or more years ago, again before the public for decision is on and the supporters of the church hope to get for it control of her educational department, of which she has been deprived since the election referred to.

National.

At Ann Arbor last Saturday the Michigan University foot ball team defeated the Syracuse University team from New York by the decisive score of 43 to 0.

The Michigan University seismograph recorded an earthquake shock early Monday morning. According to the calculations the shock occurred some 6,000 miles away. This is eight shocks that has been recorded in the past two weeks.

The charge against the national government for placing obstacles in the road of private corporations entering and using water power of the country, and especially the west, for power purposes, was set at rest last week in a letter from United States Forester Pinchot, in which he stated that the attitude of the federal government was not in any way to discourage the building of dams by private capital, but rather to encourage them, but upon the basis of such government control that the public will get a fair deal when this power is sold and that the monopoly of conditions be not made to the injury of public rights.

Information is each day coming to light of scandal underneath the custom system as it is now conducted in New York. The government of late has been enforcing the laws with more vigor and discretion and it is the outcome of this progressive campaign that a regular organized system of cheating the government on short weights and measure and by other schemes was revealed. The matter will likely be put to a grand jury and there is over 100 cases to be considered.

A hospital at Alliance, Ohio, was burned last Sunday and the 19 patients of the institution were gotten out with much difficulty.

State and municipal elections are being held in different parts of the country this week. In Maryland, Massachusetts and Rhode Island governors will be elected. Municipal and township elections will be held in every precinct in Ohio. Indiana has a temperance fight on. A hotly contested campaign is being waged in New York city over the mayoralty contest and the same is true in Philadelphia. In (Continued on page 391).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

The Uncompahgre Reclamation Project

BY JAMES N. McBRIDE.

SEPTEMBER 23, 1909, was a great day in Western Colorado, when President Taft opened the headgate of the Gunnison tunnel and the waters that for unknown ages had been confined in a rock-bound canyon rushed forth to make fertile acres of a parched land.

Some four decades ago Chief Ouray, with his tribe of Ute Indians, were the possessors of the valley. Ouray's cabin, built by the government, still well preserved, was the scene of the treaty ceding that portion of their country to the United States. A picture of the parties to the treaty included the late Carl Schurz, at that time a member of President Hayes' cabinet. Today the Indians, "undesirable citizens" and "unprofitable servants," are occupying the Southern Ute country in New Mexico, and the White River reservation in northern Utah, shiftless and improvident, while the genius of the Anglo-Saxon civilization looks up from Ouray's cabin to the winding hills above the valley, where canals larger than the Erie canal convey its water for irrigating approximately 150,000 acres of land.

Officially this work is called the Uncompahgre reclamation project, and is the first undertaken under the Hansbrough-Newlands act of Congress. For many years minor systems of irrigation had made it a pleasant, fruitful valley and the thriving city of Montrose had become the center of trade. Finally the limit of water was passed, and in seasons of insufficient snowfall in the mountains the crops would blister and parch under the rays of the unclouded sun. There was the land, the people restless with energy, typical of the American spirit to conquer difficulties. The valley was like Tantalus, king of Phrygia, in its inability to parch its thirst, yet the water was but a few miles away, dashing in useless energy against the granite canyon walls. Statesmanship is but foreseeing, and President Roosevelt could foresee both the land

hunger and the valley waving with grain ripening for the harvest; fruits of every kind known to the temperate clime; schools, churches, homes, and prosperous happy people. The statesmanship of the east had not been aware of these condi-

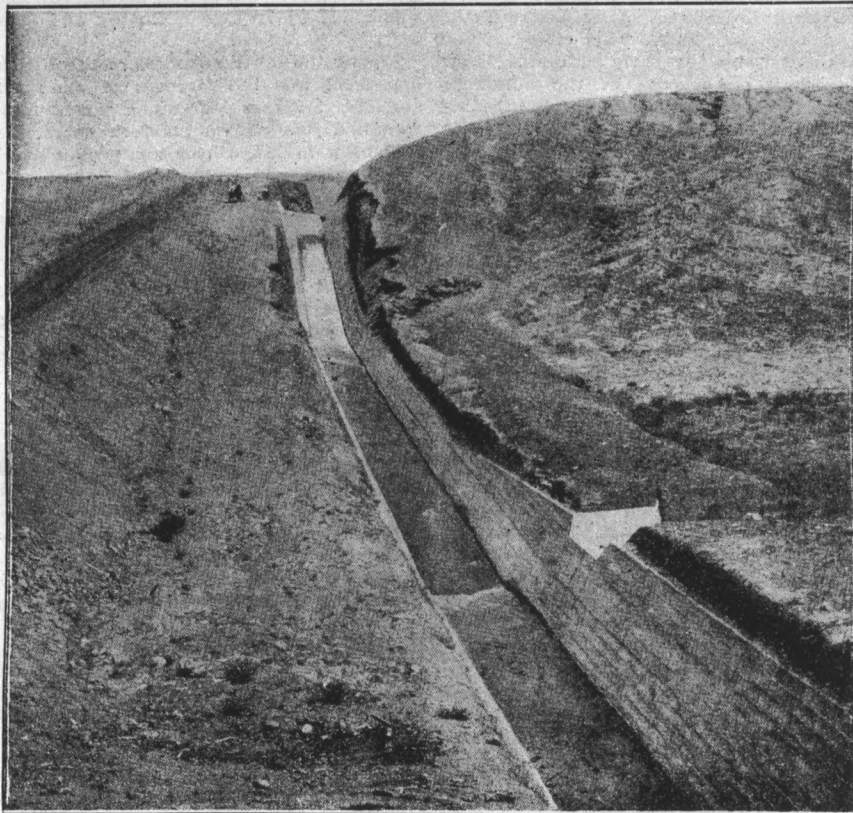
tions until a man who could feel the people's needs with the accuracy that the mercury measures temperature and the barometer air pressure, placed, by administrative power, on the statute book the present irrigation law. In brief, the law

provided for segregating the funds derived from the sale of public lands in the arid states and using this money for reclamation purposes. To restate the law, it simply says that when there are sufficient funds, derived from the sale of public lands, these funds are to be used to make other lands salable, and the added value of the water to the land is included in the sale of those lands, and the funds returned to engage in other reclamation projects. River and harbor appropriations never return anything directly to the government, nor does the construction of public buildings, while irrigation projects but advance the money derived from the sale of public lands to make unsalable public lands salable.

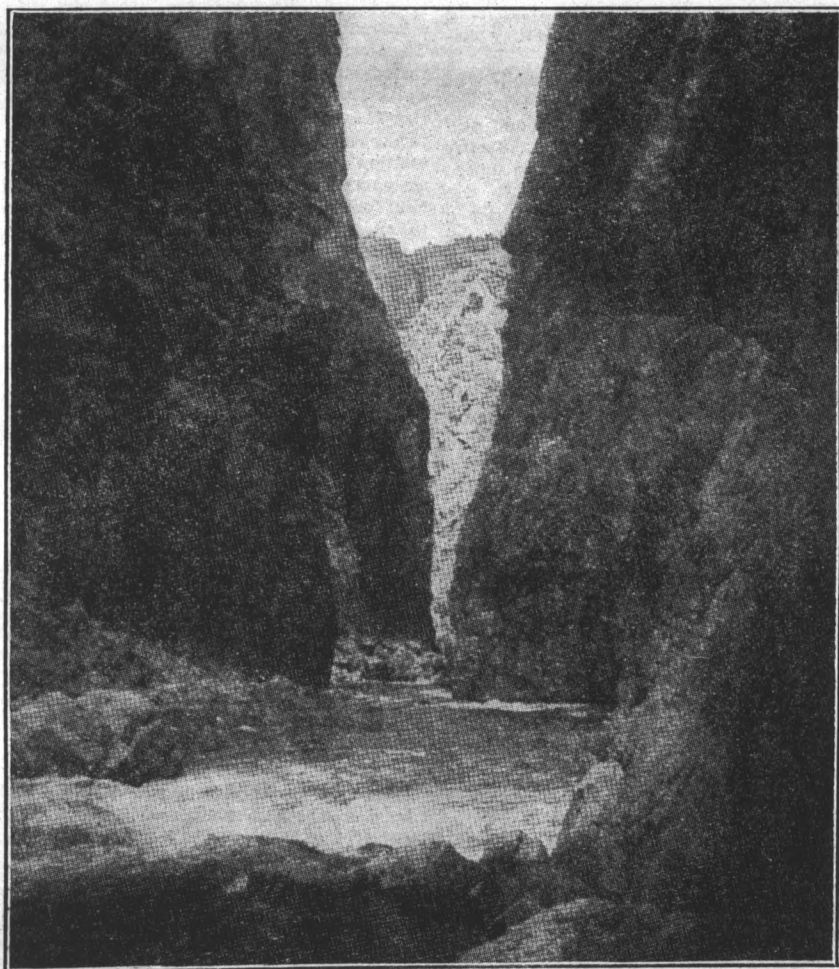
The reclamation service people are methodical and careful. The topographic surveyors measure the land and compute the area possible to irrigate. The hydrographic survey measures the water in volume and source of supply. The soil survey examines the land to see if it is suitable for agriculture. Uncle Sam's khaki-clad young men are around with the weapons of scientific investigation and determination, and the Crusaders of old were not more determined in their conquests. The glories of the military will long be forgotten when the names of Fellows and McConnell, who surveyed and constructed this irrigation project, will be remembered.

The tunnel is six miles long and 9x11 feet in the clear. It is lined thru with cement. The formation thru which the tunnel passed embraced granite, shale, fossil beds and hot springs. Gangs of men worked on each end, and when the "headings" met, on July 6, at 5:45 p. m., the difference of lines was less than one-half inch.

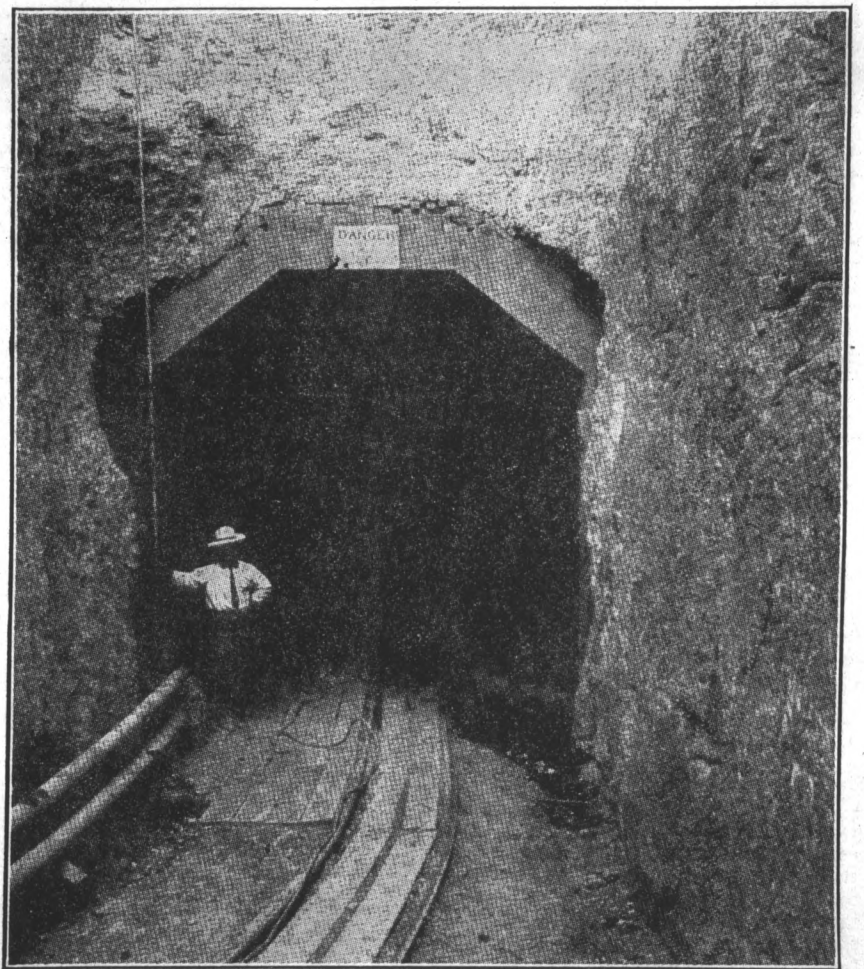
The magnitude of the undertaking can best be understood when compared with the Erie canal, which was originally finished in 1825, was 28 feet wide on the bottom and four feet deep; in linear meas-



One of the Cement-Lined Chutes which Favor the Generation of Electric Power.



Black Canon of the Gunnison, where Water is Diverted from this River.



The West or Uncompahgre Valley Portal of the Great Gunnison Tunnel.

ure 363 miles long and cost \$7,200,000. The Gunnison tunnel was four and one-half years in building and, with the distributing canals, cost \$5,000,000. The tunnel cuts under and up into the bed of the river so that no diversion dam is necessary to turn the water into the tunnel. Almost the last drop can be drained from the river if required, and during flood time the unused water passes over. There is 372 feet fall from the tunnel portal towards the valley to the level of the Uncompahgre river in the center of the valley. With this fall there can be sufficient power generated to light every home in the valley and provide power for all industrial uses. The project will afford homes for a population of at least 25,000 people in the valley and upon the irrigated mesas or tablelands. The elevation is 5,500 feet above sea level, and the daily variation in temperature, extending over a period of twenty years, is about 40 degs. The highest temperature is about 100 degs. and the lowest—20. These are extremes and last but a few days.

That governmental functions are growing more paternal in the best sense of the word is seen in the fact that the limit of land, privately owned, for which water will be furnished to one head of a family is 160 acres. The acquisitive man can not extend his ownership beyond these bounds. The one restriction which prevails on all lands using government water is that there must be an actual bona fide settler on the land. The lands cannot be held by non-residents or for speculative purposes, nor can a non-resident hold and rent to tenants. The total cost of water in perpetuity will be approximately \$35 per acre, to be paid in ten equal payments without interest.

One has to understand a valley country under irrigation is only part of the agricultural assets of the section. Ascending in steps up the hills from sage brush flats to pinyon and cedar, up into the pine and spruce in the high mountains, is the pasture land. The sheep ascend gradually in the spring and descend in the fall and winter in the dry valleys. Fattening sheep and lambs are often finished on alfalfa and a minimum of grain. Thus it might be said that the valley land is all subject to rather intensive agriculture, to fruit, potatoes, beets, with the minimum of grains and the maximum of alfalfa.

The Moses of the Gunnison tunnel project, who did not live to see its completion, was a cowboy-lawyer, Meade Hammond. Hammond had ridden the country as a cowboy and was familiar with the situation in every way. He forsook his cow pony to study law, and was elected a member of the legislature from the Delta-Montrose county district. That session of the legislature elected Thomas Patterson, United States Senator as a populist, and in the political deals that followed Hammond secured an appropriation from the state of \$25,000 to make surveys, and an actual start at the tunnel was made. Hammond was a diamond in the rough—tall, gaunt, and uniquely profane, in the sense of being artistic in swearing. In the capitol at Denver he would take off his silk hat which he deemed a legislative necessity, but uncomfortable nevertheless, and interspersed with the genuine western cuss words, tell of what the Gunnison tunnel would do for his district. Judge Bell was in Congress, Thos. J. Patterson in the Senate, and when the irrigation act was passed, the project for which the state of Colorado had voted \$25,000 as an investment was determined among the first reclamation projects. Hammond was dead, but his energy was rewarded in the consummation of his pet project.

From the point where the Rio Grande railway leaves the canyon the Gunnison river had never been explored, so precipitous the walls and so torrential and treacherous the stream. As a partial exploration was necessary, A. L. Fellows, a U. S. engineer, and Will Torrence, of Montrose, undertook the work. Their equipment was a canvas boat, surveying instruments, food, etc. On the cliffs above, equipped with ropes, were watching parties to rescue them in case of accident. Several days were spent in the work and a suitable site for the tunnel on the canyon side was chosen. The boat was upset and the sextant lost in a whirlpool, but this was the only mishap of consequence.

The contract for the construction of the tunnel was let to a Texas firm of contractors who commenced work but, to the consternation of an army of workmen, their pay checks were refused at the banks. The Reclamation Service took possession, paid the men and continued the work under direct government control, just as is done at Panama. The canals were constructed by different con-

tractors and were separate parts of the work distinct from the tunnel.

The figures of speech, as, "making the desert bloom like the rose," and "tickling the soil until it laughs with the harvest," have been exhausted and are shelf-worn in describing what water does for the sage-brush desert, the home of the jack rabbit and the prairie dog.

About one mile west of Montrose on the Mesa is one of the show places where a full section of land is devoted to fruit, mainly apples and peaches, and a small portion to prunes. The waters from the irrigation ditch follow down the furrows, near the roots of the trees and the union of soil, sunshine and water produces such fruits as delight the eye and taste. The much-abused prune of the boarding house grows to perfection. The prune is like a plum until it takes a bath in lye to break the skin, and is then spread out to dry on board racks. Its finish is dipping, when dried, in a dilute sugar syrup,

and packing in fancy boxes, for the fancy trade.

The alfalfa fields when plowed for sugar beets are exceedingly fertile. The red soil is somewhat deficient in nitrogen but the alfalfa supplies this and the mineral elements, phosphoric acid and potash, in abundance. Then, with the control of the water, and continuous sunshine, the sugar beet grows to perfection. The novelty of not looking at the clouds for the supply of moisture to grow the crop, but going to the ditch headgate appeals to one at first as a reversal of all of our preconceived notions. After a time we like it, and if land is to be "judged by its fruits" irrigation certainly delivers the goods. The struggles and hopes of the Uncompahgre valley, when realized by the formal opening of the Gunnison tunnel and the rushing forth of the silty waters, is one of those genuine triumphs that makes the Anglo-Saxon the unconquered and unconquerable people.

THE ROMANCE OF CROW MEADOW

BY J. S. DRAPER.

Chapter I.

Along the Illinois river, a few miles above the little city of Lacon, is a strip of low, flat land, some four or five hundred acres in extent, lying between the river and the bluffs. This strip of land was called by the early settlers, "Crow Meadow," on account of the numerous flocks of crows that made it their feeding ground in early spring. The soil is deep and rich, and sometimes during the spring freshets the river will overflow for a short time, and thus the fertility of the soil is yearly replenished.

Crow Meadow is owned at present by the descendants of a worthy German immigrant who located here in the forties. On an elevated plateau, high up on the bluffs overlooking the river and surrounding country, is the comfortable farm home of Henry Ulrich, who has the reputation of being one of the best dairy farmers in this part of the state.

About the middle of July, 1907, as Mr. Ulrich and family were sitting down to dinner, a large touring car drew up in front of the door. A gentleman came from the car and asked if his party could get dinner.

"We will do the best we can for you," said Mr. Ulrich. "Just drive your car under the trees in the yard and come in and make yourselves comfortable."

"Thank you," said the gentleman, and returning to the car he assisted two ladies to alight, who he introduced as Mrs. and Miss Hartsell, his wife and daughter.

So well pleased were they with the dinner, the comfortable surroundings of the farm home and the agreeable chat of its inmates, that the time passed unnoticed. The parlor clock was on the stroke of three when Mr. Hartsell glanced at his watch and said, "I had no idea it was so late; the time has passed so pleasantly."

As he looked from the open window at the great fields of waving corn that stretched far away in the distance until corn and river seemed to merge into one, the dark green making a beautiful setting for the bright shining waters of the flowing river that reflected the rays of the hot July sun until its broad expanse looked like a great sheet of burnished silver, he said, "What a beautiful home you have here, Mr. Ulrich, and how you must enjoy it. Everything is so quiet and restful. Such a change from the dusty, noisy city. We left Chicago yesterday morning in our auto, for a short excursion into the country. My wife's health is not the best, and I thought a little outing would do her good. We came here by the merest chance, but my wife is so charmed with your home and its surroundings that she wishes me to see if we cannot make some arrangements by which she and Edith can spend their outing here with you."

After a short consultation with Mrs. Ulrich, arrangements were made and Mrs. Hartsell and her daughter became a part of the Ulrich household. Mr. Hartsell returning to the city and to his office the following day.

Mrs. Hartsell was a thro-going woman of the world. Her whole ambition was to be a leader of fashionable society. Calls, balls, receptions, theatres, and an endless routine of frivolities were fast making a nervous wreck of a once vigorous and robust constitution. In most respects Miss Edith was totally unlike her mother. She lacked the decision and push of the former. She was vain and selfish. Some might call her beautiful, but her face lacked expression, altho her features were regular, and, when painted and

powdered, had a doll-baby sort of prettiness. Her highest ambition was to make a "mash," as she termed it, on the brainless city fops. To sum it all up, her life was made up largely of flirting and flattery.

Among the other members of the Ulrich household was the foreman of the farm and dairy, James Morgan, a young man who had just passed his 24th year. He had been in Mr. Ulrich's employ almost three years and had proved honest and trustworthy. He had taken the dairy course at the state agricultural college and thoroughly understood his business; in fact, so well liked was he that Mr. Ulrich often said he did not see how he could run his farm without Jim.

Last, but not least, in the Ulrich family was daughter Hettie; a plain, quiet, unassuming young lady of 18 summers, whose busy hands were constantly putting things to rights. The orderly look of the whole house was due to her ceaseless vigilance. She knew just what to do and how to do it, to make the home bright and cheerful. A stranger would call her very plain looking, but on closer acquaintance there was a certain charm about her conversation and tone of voice that made one forget all about her plain looks.

Chapter II.

For a few days after the departure of Mr. Hartsell the mother and daughter found plenty of enjoyment in their new surroundings. Everything was so different from what they had been used to. The cool green lawn, with its shade trees and flower beds, and, farther away, the great fields of waving corn and the pasture where the sleek dairy cows were feeding or lying down contentedly in the shade of the many trees, made a pleasing picture to our city friends, and they enjoyed it to the fullest extent.

One afternoon, as Mrs. Hartsell was making her customary journey into the land of Nod, Edith stole gently out and started on a voyage of discovery. Seeing the gate to the vegetable garden open, she entered and strolled along down the rows of growing vegetables. Making a sudden turn she saw Mr. Morgan, or "Jim," as he was familiarly called, directly before her. He was busily hoeing a large bed of onions and had not noticed her. She stood and watched him at his work. What a broad-shouldered, sturdy man he was. Every movement showed activity and strength, and her mental comment was that if he would only discard those coarse clothes and dress himself fashionably, he would look like a gentleman. As these thoughts passed thru her mind, Jim, looking up, saw her. Raising his hat slightly he said, "Why, Miss Hartsell, you took me entirely by surprise. I had no idea you were in the garden."

"O, I came in by a mere chance. I was out for a walk, saw the gate open and just strayed in. I wanted to see how vegetables look when growing. I had no idea you were here or I should not have dared trespass."

"O, you are not trespassing," laughed Jim. "If there is anything I can say that will enlighten you as to how vegetables grow, I am at your service."

"The plain truth of the matter is," said she, "I hardly know one vegetable from another, and I am afraid you would be laughing at my ignorance if I should ask questions."

"It does seem odd," said Jim, "but then, as the lawyers say, circumstances

alter cases. If my home had been in the city I would be as ignorant as you are about such things, so you see it is a mere matter of our surroundings. If I should go to the city my country ways would make people laugh at me and they would call me a hayseed, or some other appropriate name."

Edith could not help laughing at Jim's way of putting it, and said, "Don't you get tired of working these hot days and feel as tho you would like to get away from it for a few days' outing and have a change?"

"It is a little tough at times, but I manage to get along by taking a day off now and then and driving over to Lacon. There is always something going on over there to amuse one."

"How far is it to Lacon?"

"Only a few miles. Black Bess, that's my colt's name, makes it easily in an hour. I am going to drive over after supper. The roads are good and it begins to get cool at that time."

Edith hesitated a moment and then said, "Mr. Morgan, would it be asking too much of you to let me go with you, as I would like to do a little shopping?"

"Surely not. I would be delighted to have your company. I will be ready about half-past five."

"I will not keep you waiting, and now I must go back to the house, as Mamma will be waking up and miss me."

After supper the black colt was hitched to the buggy and driven around to the door. Edith came down the walk all equipped for the drive. As Jim was about to assist her into the buggy, she looked up and a look of wonderment came into her eyes. Was this good-looking, fashionably dressed man Jim? Could clothes make such a difference in a person's looks? She had looked upon Jim more in the light of a servant than an equal, and now she felt a little shy of this strange man. Jim on his part, as he saw Edith coming down the path, tho he never had seen a more beautiful girl. As they drove out of the yard, Hettie came out on the porch and looked at the fast disappearing buggy. When it had turned the corner and was out of sight she walked slowly back into the house and began to clear the supper table.

"Hettie," said Mrs. Ulrich, "Jim said this morning that he was going to town after supper. I wish you would see him before he goes and tell him I want to send for a few notions."

"He has already gone, mother," said Hettie.

"What! As soon as this? I did not expect he would go for a half hour yet."

"Perhaps not," said Hettie, "but he had company and that may be the reason he went earlier than usual."

"What company?" said Mrs. Ulrich.

"Miss Hartsell went with him," said Hettie.

"Miss Hartsell!" said Mrs. Ulrich, stopping short. "O, yes, I see," said she with a knowing smile and a shake of her head. Then continuing she said, "There is something about this city girl that I don't quite like, and yet I can't hardly define it. I can understand Mrs. Hartsell better. She is outspoken and has decided opinions of her own, altho they may be at variance with my own, yet I respect her for her honesty. If I am not mistaken, it will be some time before she regains her health." Then turning to Hettie, she said, "I wonder what took Jim over to town. Did you hear him say?"

"No," said Hettie. "Probably some repairs for the farm tools," and picking up a market basket she strolled off into the garden.

Black Bess drew the buggy swiftly along the smooth, hard road that wound in and out along the high bluffs.

Miss Edith was at her best and asked innumerable questions about everything she saw. Directly the road made a sharp turn, the bluffs were left behind, and then a couple of miles along the river and they entered the little city.

As Jim assisted Edith to alight, she said, "How long will you be in town?"

"I can be ready to go in about an hour," said he, "unless you wish to stay longer."

"O, no, that will be plenty long enough for me."

In about an hour Jim returned to the buggy and found Edith waiting. "Miss Hartsell," said he, "just half way up this block there is a splendid ice cream parlor. I often go in there when I am in town. May I have your company on this occasion?"

"Why, nothing would please me better."

(Continued on page 383).

INSTRUCTIVE AND EASILY MADE TOYS.

BY I. Z. Y.

Looking back over my boyhood days, one of the happiest I can remember was when my father took me to a small saw-

mill, and left me there all day to do just as I liked.

By a certain arrangement of the nails in the round stick, or drum, the hammers could be operated upon in such a manner

alone in childhood is this companionship shown but in after years when the boy or girl, children no longer, return to the parental roof from their pilgrimages out in the world, the old dog is greeted as one of the household. As the fond pet bounds to meet those who return from their daily tasks, he may long to again run after the stick the boy used to throw, or to romp with the girl as in years gone by when all were young together. No memory of those happy days may linger in his canine mind but the dimming eyes look to the human ones with all the old-time affection, tho they may be averted or indifferent to the welcome as they gaze into the future in dreamy contemplation. A caress fills him with the old joyousness, tho his aging limbs refuse to express his emotions in the erratic capers of puppyhood. A kind word, however lightly spoken, penetrates his ears despite his impaired hearing, and sets his expressive tail wagging as childish shouts used to do.

Whatever the pet may be, whatever the environment or disposition of the child, the fond association and close companionship with a creature from the dumb creation tends to make the child more gentle toward others of the pet's order. This gentleness often outlasts the span

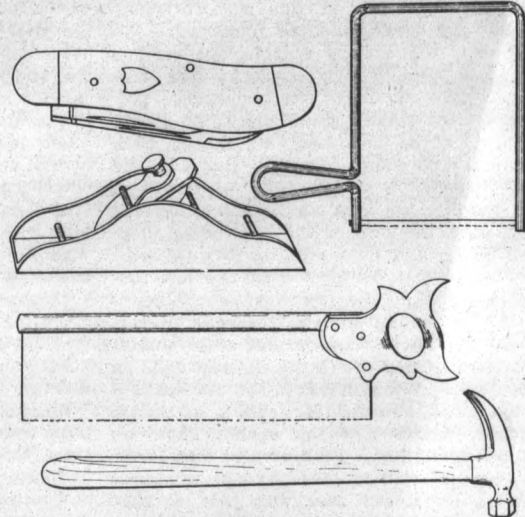
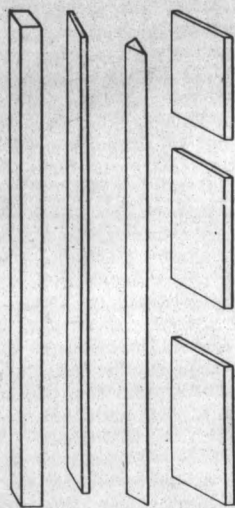
flower gardens, a few small spruce and fir trees, and a long, straight gravel walk from the gate up to the front door. The back yard was still larger and the wood-pile in it used to be pretty large, too, to our sorrow—that is, until it was chopped up. There was a large shed, with a tower on its roof and a wonderful weather-vane on top of that. Then there was a big henyard with a very cosmopolitan population—Cochins, Plymouth Rocks, awkward Shanghais and pretty Brown Leghorns. And there was a great barn with a long workshop attached to it. The barn was a delight to us. The high mow, usually well filled with hay and clover, was a great place for turning somersaults and sometimes we would find a nest of eggs there that some old hen had cunningly concealed. Below were the carriages, farm wagons and sleighs, and the stalls for the horses. There was also a cellar under the barn in which a new family of pigs dwelt each year, and along the beams overhead innumerable barn swallows had built their nests and were constantly flying in and out. On the roof of the barn was a wind-mill, a thing we looked upon as a great invention, for it sawed all our wood for us, thereby consigning the bucksaw to oblivion.

The Fields and Old Orchard.

And then there were the fields. There were a great many of them—more than a dozen—and beyond them the swamp, as large or larger than all the fields put together, stretching away into unknown dark, wet dismal solitudes.

And there was an orchard, an old orchard, which bore wonderfully well. There was a garden, too, that we had to do some hoeing in pretty often thru the early summer, but then the water-melons and cucumbers and green corn and all the other fresh vegetables fully repaid for all that, and—I almost forgot the strawberry patch.

The fields were our playgrounds. Some of them were hay fields, some oat fields and some wheat fields. But many were just pastures where the rocks had not yet been cleared and where the red-top and blue-grass grew very short or was kept so by the cows. Away down on the walls by the edge of the woods were many grape vines which bore marvelous clusters in their season. Down in the swamp



Samples of Material and the Few Simple Tools.

When the day was over, I came home the happy possessor of a bundle of square, flat, and corner strips, with several short narrow boards thrown in.

The tools I possessed at that time consisted of a good jack-knife, a hand scroll saw, a small iron plane, a back saw, and a hammer.

It was the beginning of the school holidays, when many boys are at a loss to know what to do with themselves, but it is safe to say I was not called off the street many times.

The toys I made from these strips of wood and boards are too many to describe, even if there was space enough granted. Step ladders, chairs, tables, clothes-line holders, etc., for my sister's doll house; ladders, pig troughs, and many such things for my brother's Noah's ark, and many others, mechanical and useful.

Some of the mechanical toys made in those days served me well in after years. A parallel motion arrangement, which I had seen at my father's coal mines, but which I did not fully understand, yet made a fairly good working model as shown, but recently came into service in a peculiar manner. A scheme was required to cause a rod to move vertically without running out of plumb, and remembering this small model made when a boy, it came in handy.

One of the prettiest toys, perhaps, was an old-fashioned four-poster bedstead, altho at that time, four-poster beds were not considered old-fashioned. The posts were held together with round-headed screws and so made that the bed could be easily taken apart, like the one it was modeled after.

A model stamping forge, which amused my younger brother for many a day, in fact, lasted an indefinite length of time for it was substantially built, was admired by many. A dozen two-inch square pieces of wood about nine inches in length, and furnished with small projections, were held in a vertical row by means of two strips of wood, as shown. In front was a short length of curtain pole, or round stick, with a number of

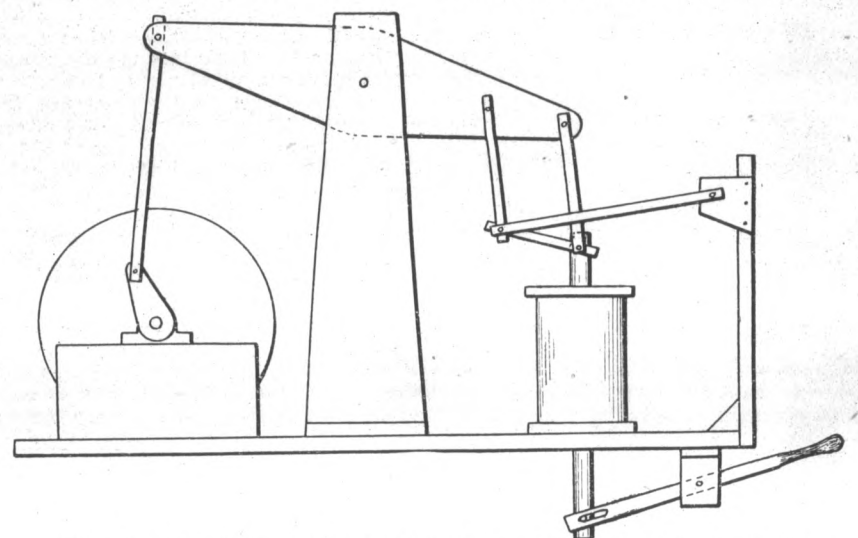
that the first would not again be lifted until all the rest had. In like manner a variety of runs or changes could be made. In the illustration three are lifted together. Everyone is free to admit that as a general rule boys like anything that will make a noise.

One of the greatest blessings a boy can have is a father or mother who can bring themselves down to his level. No parents need fear that their time is too valuable to bother with such trifles. Some of the best men today, several in particular I have in mind at present, who are well up in the commercial and professional life, take as much interest in their children's playthings as the children themselves, going so far as to help them in constructing new ones or additional parts, as bridges for their clockwork trains, or parks under their Christmas tree, etc.

CHILDREN'S PETS.—IV.

BY HATTIE WASHBURN.

The dog is doubtless the most common of children's pets. That noble animal, so affectionate, so devoted and useful, joins in the sports of the children, guards them in their wanderings and lavishes upon them that affectionate devotion which has bound the human and canine races by strong ties for countless generations. Not



This Parallel Motion Affair Required Some Thot and Mechanical Skill.

of childhood and many a hand raised against one of the dumb brutes is stayed because of the memory of a pet known long ago.

FARM LIFE AND SPORTS.

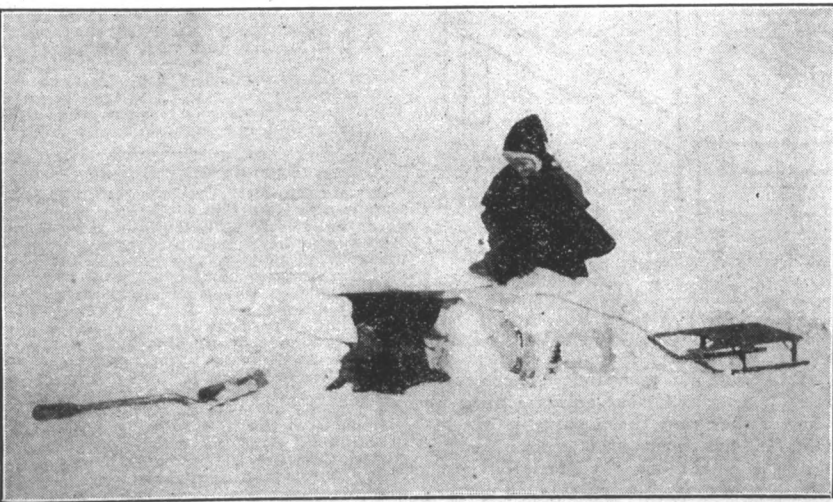
BY CHAS. E. JENNEY.

The days on the farm as a boy are days of sunny remembrance. It was a large farm about a mile from the village. I do not know just how large, for we boys did not use acres as a measuring unit. We simply knew that it was large, with many unexplored corners. There was the long, low-roofed farm-house, a story and a half high, with half a dozen gable windows peering out of the roof. The roof was painted red and the rest of the house white except the traditional green blinds. There was a long veranda at the front and a smaller one with no roof at the rear. The house, instead of extending back from the road, had its greatest length facing it. It stood on a hill and the road came right up to the yard at right angles to the house and threatened to go right thru the centre of it but suddenly turned, or rather split, to the north and south at right angles. So there was a splendid view of all the surrounding valley.

There was a large front yard with

cranberries grew in profusion and also blackberries, blueberries and dangle-berries, also swamp-apples on the wild azalea. Around the edges of the fields black raspberries, large and juicy, were very abundant.

There was never an orchard like that orchard before or since. The trees were low-limbed and spreading patriarchs, some almost in a state of decay, and many had hollows in their old trunks in which the bluebirds built their nests in the early spring and laid their pretty blue eggs. I know just how every tree in that orchard stood. As you jumped over the gap in the wall at the corner (for no boy would ever think of going around thru the bar-way), there stood a pear tree, the only one there. It was an old Flemish Beauty into which there had been grafted some choke pear stock and both bore yearly. Then there was a row of Tallman Sweets. The first apples to ripen were the Red Astrakhans and then the Summer Sweets. There were Star-apples and Pig-noses, Russets and Baldwins and, best of all, lots of Greenings. Why is it that the stomach of a small boy has a greater capacity for apples than that of a full-grown man? It seems to me that we ate bushels then where we eat dozens now. But for all that, we could not eat all the apples which that



The Dog Joins in the Sport when the Children Play Esquimo.

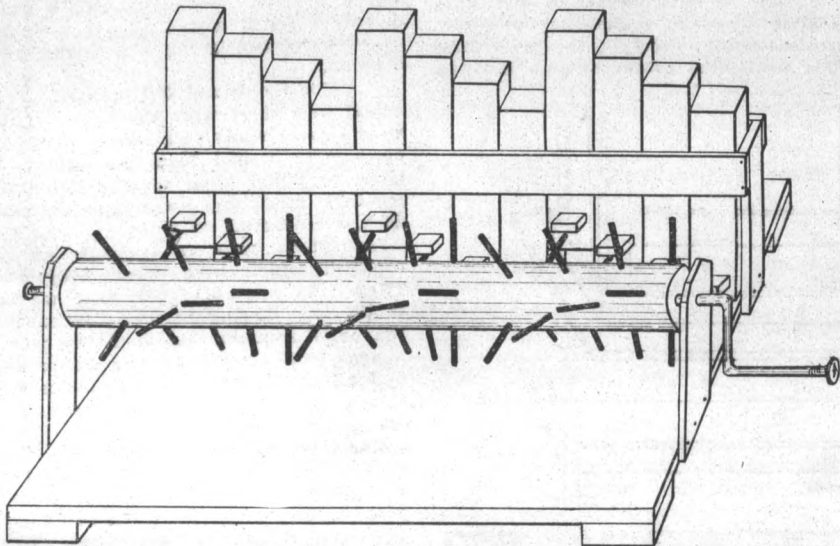
old orchard produced, so father made a small hand press and we used to wheel the apples over to the shop and feed them into the press while the sweet cider dropped down into the pan beneath, to be sipped later thru an oat straw. What remained was put down cellar to harden into vinegar.

Our road to school lay across two fields and thru the woods by a very winding path. It was such a pleasant path that it would make any boy want to go to school, altho likely to make him linger on the way and so be late.

In winter there was no lack of ponds to skate on and father made my brother and I each a sled. The hill where our house stood was great for coasting. If we could have gotten safely over the stone steps at the gateway we might have started at the front door and gone straight out the gate and on down the road. But that was impracticable and so we had to begin around by the barn, go down out the carriage way, turn two corners and then we were in the road and kept on going until friction overcame the momentum. We made a double runner

used to feel for a moment when father would ask if there were any apples up stairs. The reply generally would be in the negative, which was followed by the suggestion that the boys had better go down and get some. Of course we took a light along, but that only made the darkness blacker and the noises louder. But we felt happy when we got back by the fireside again and helped ourselves to the biggest apples by way of recompense.

It seemed to us in those times as if the whole day and all the days were for boys to play in. And when we were set at work reducing the wood-pile to stove lengths, or hoeing the weeds in the garden, it seemed just as tho so much time had been lost from play, and so it had. But we made the best of it and, there being two of us, we used to make a sort of play of our work. How much easier it is for two to work than one. I do not believe we ever felt more than half sorry when we heard father say, "Well, I must mow that south lot tomorrow," altho we knew it meant two or three days' work for us, unless perhaps it broke up some



Toy Model of a Stamping Forge. (See "Instructive and Easily Made Toys").

by my lying down at full length on the smaller sled and hooking my toes into the runners of the larger sled on which my brother followed; or sometimes he simply held on to my feet. By simply swaying my body to and fro I could steer both and turn the shortest corners, for our sled could bend as if it had a hinge in it.

Adventures in Garret and Cellar.

Boys are out-door animals, but sometimes a rainy day and an over-ruling mother confine them to the house. For this purpose the institution was invented which is called a garret. Garrets are never furnished, for then they would not be garrets. Our garret had been partly lathed up but the back part was dark and be-cobwebbed, and so low was the roof there that we had to bend our heads to make our way along. It was a fearful place to go alone in the night, but in the daytime, with a companion, it was fun to go up there just to be a little frightened. There were rats there and a heap of old rubbish by the chimney in which were old-fashioned bed posts, sections of spinning wheels and several very old splint-bottomed chairs. In later years, when old things came into use and fashion again, these old chairs were rooted out, mended up as best they could be, and with the addition of cushioned seats, a luxury that their early days never knew, were placed straight and prim in our city parlors, where they were viewed by connoisseurs as very rare specimens. One of the small rooms that had been partitioned off in the garret was our playground. It was chock full of dark corners that extended away under the eaves, and these made fine caves for us when we played Indians and re-adventured the adventures of all our heroes, but we usually had this fun put a stop to at the most interesting and exciting part by our mother who, remarking that we made noise enough to tear down the house, would march us off down stairs to our great momentary grief.

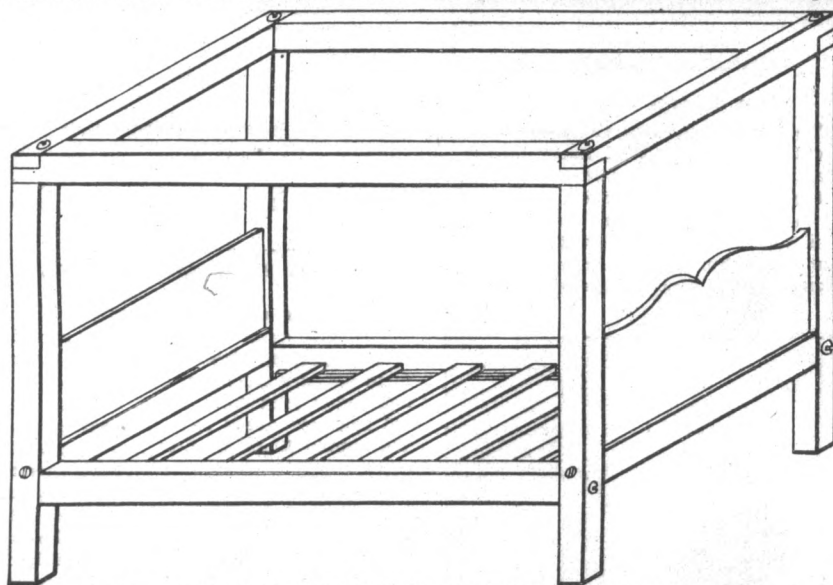
Another unfurnished room in the garret contained a single article of furniture, a flour barrel filled with pop-corn and sweet corn, with which many a winter evening was to be whiled away. It was also convenient for the mice, for invariably when we got near the bottom of the barrel toward spring there was about an inch of shelled corn, more or less nibbled, and many cornless cobs.

Down cellar was a good many barrels filled with Baldwins, Pippins, and Greenings in the fall, and how miserable we

previously planned and much looked-forward-to expedition. It was more fun than work, at least so it seems to me now, to follow on after the scythe or mowing-machine, pitchfork in hand, loosening and spreading the fallen grass and then raking it up into the big, round cocks which we would run and dive into whenever father's head was turned for a moment. Then there was a lot of excitement attending the mowing of a hay field. First we come across a quail's nest—fourteen snow-white eggs—under the dead undergrowth of last year. What a wonder that they were not all smashed by the sharp blade of the scythe. Next a little green snake, thoroly surprised at this invasion, but not forgetting to wriggle off, makes a sort of diversion. Field mice and moles are occasionally spied and captures attempted. And then the climax—a hornet's nest is suddenly come upon. And what boy can be

we were a whole playground in ourselves. There was a large pasture near the farmhouse that raised a very large crop of rocks. I do not know but some of them might even have been called boulders, for only the tops projected above the soil, and some were very fair-sized pebbles. This field we played was the world, or rather the ocean, and the rocks were the islands. We always started out on our voyages from a large rock by the bar-way where our boats were anchored. Our boats were simply small pieces of board, perhaps three feet long, six inches wide and an inch thick. At least this was the most desirable shape. We sailed them by resting one end against the heel of our shoe, the sole of the foot being upon the board, and then pushing forward with the other foot, never taking the left foot off the boat. But we were not able to sail from island to island simply in this manner. There was another requirement. We had to pay our fare. It was done in this way. When we first set out we had with us a handful of pebbles or small stones, which was the cash. Then we stood on the home rock or port and threw a stone at a neighboring rock. As soon as we hit it our fare was paid to that place and we proceeded to sail thither. Here we would throw at the next rock, and so on. If we fell short of pebbles we could pick up a few around the island altho we could only take such as could be reached without leaving the rock. In this way we would go about nearly all over the field. Sometimes we would get into an obscure part of the ocean, that is, where there were few rocks and the nearest would be a good stone's throw away and then our aim had to be good. Sometimes one of us would get caught on a lonely isle in mid-ocean without any stones to throw and none within reach. Then he would have to signal for help to the other and the rescuer would make his way to some land where stones were plenty and, taking in a double supply, hasten to the rescue. We used to set off around the world in opposite directions, meeting at some point selected beforehand, where we would relate our adventures and tell of the many countries we had passed thru. We named all the principal rocks after islands or countries or other geographical divisions made familiar to us by our school studies, altho without paying strict attention to locality, and we would talk of taking a voyage to Hong Kong, or a trip to Tasmania, as coolly as tho the world were nothing but a field and our fortunes pebbles. We took particular delight in making long and difficult trips, that is, to rocks small and isolated from all others. Thus we circum-navigated the globe and became great voyagers.

Near the house stood a part of a building—a piece that had been cut off from an old workshop. It was about ten or twelve feet square with one side open to the weather, a door on the opposite side and a window in each of the two other sides. There was no use for this shed as there were enough other buildings on the place and, as it was out of repair,



A Four-poster Doll Bed of which Any Little Girl would be Proud.

(See "Instructive and Easily Made Toys").

satisfied in such a case until the nest is totally destroyed and he is stung half a dozen times so that his face for the next day or two resembles a case of the mumps.

Some Original Games.

We had one or two games that were distinctly our own, I believe. We were a little isolated from the other boys of the neighborhood, not on account of distance so much as on account of shyness, but

we took possession of it. It had the combined attraction of being in the house and out of doors all at the same time. In it we kept our treasures. There were lots of boards and loose shingles piled up in one corner and these shingles we inserted in the horizontal cracks in the sides of the building, thus forming small shelves. On these all our smaller possessions were carefully laid, and nails were put up to hang the heavier articles on.

This shop or shed we called a ship, a warship, if you please, for a boy delights in guns and swords and battles. In it we sailed many a stormy sea, rode out many a fierce tempest, and fought many a gallant sea-fight. By the way, this was a great institution for our mother. Here was a place to play on a rainy day, for the roof leaked but little, there was no noise nor danger of tearing down plastering and yet we were within reach of a careful supervision, for the open side of the shed faced the house.

Our most effective weapons were elderberry pea-shooters. We cut down an elderberry stalk, cut it into foot lengths, stripped off the thin bark, bored out the pith with an old umbrella wire, and there was our magazine rifle. For bullets we gathered the gray, powdery bayberries that grew plentifully along the pasture walls or around the rocks. These we would blow thru the elderberry tube with great force and accuracy at imaginary pirates, sea monsters and the British. We became very expert with our pop-guns and when our tube was exactly the right length and bore we could fire the bayberries quite a distance and hit a surprisingly small mark. Our rifles were magazine rifles, for we could fill our mouths full of cartridges and fire them out one at a time. We kept tin boxes and cans on the shelves filled with these bullets. We also had harpoons for whales, sharks and other marine monsters. A long maple or birch stick sharpened to a point at the larger end, and with a line tied to the other so as to recover it after a throw had been made, was the weapon.

Great old times had my brother and I in that piece of old workshop. After we left the farm and went to live in the village it stood for some years and then was torn down and cut up for kindling wood, a sad ending for so gallant a ship, yet better perhaps than lying rotting at the docks, half buried in the mud, as many a better hull has done when its day has passed.

DRIFTING BACK HOME.

BY DORA H. STOCKMAN.

It matters very little just the spot where we were born,
Whether in a lowly cottage, or pillared palace, frieze adorned,
No other skies will ever seem as clear and soft and blue,
The stars shone always brighter, the grass was a greener hue.
So East and West, or North or South,
Wherever we may roam,
We all come drifting, drifting—
Come a-drifting-back-home.

The roses were the sweetest that grew beside our door
That mother's hand had planted, in those dear, dead days of yore;
We would feel the clasp of kindred, who with us were hushed to rest,
There are no folks like the home folks, that were sheltered in our nest.
So East and West, or North or South,
Wherever we may roam,
We all come drifting, drifting—
Come a-drifting-back-home.

We have followed devious pathways, chasing after rainbow gold;
For our childish faith we're longing, ere the clouds of doubt uprolled;
The flower of Hope blooms in those fields without a single thorn,
And heaven itself broods softly o'er the place where we were born.
So East and West, or North or South,
Wherever we may roam,
We all come drifting, drifting—
Come a-drifting-back-home.

PUSSY'S THOTS.

BY GLADYS HYATT SINCLAIR.

Say, what thots does my black puss think
Staring so steadily, never a blink?
Surely some magical dream there lies
Back of his wonderful topaz eyes.

Mice like elephants? Lakes of milk?
Miles of ribbon and worlds of silk?
Fat, down cushions and fish that swim
Onto a platter and wait for him?

Moonlight always, and dogs that go
Racing and yelping, he scares them so?
What queer thots does a black puss think,
Staring and staring so, never a blink?

Cooking Suggestions.

A valuable little book called "The Enterprising Housekeeper" has proven of great benefit to thousands of good housewives who have had to contend with the unexpected visitor, the "finicky" appetite and the many other little things that tend to make her life miserable. This book was published to sell for twenty-five cents, but for four cents in stamps, to cover the cost of mailing, the publishers will forward it to you. Address The Enterprise Mfg. Co., of Pennsylvania, Dept. 42, Philadelphia, Pa. It contains 200 recipes of the sort that proves so beneficial to the housewife and makes the practice of economy easy. Many helpful suggestions are made for teas and luncheons. Numerous illustrations of household utensils run thru the book. Altogether the book is the best of its kind seen for some time and should be in every household.

THE ROMANCE OF CROW MEADOW.

(Continued from page 380).

As they came out of the parlor they stopped a few minutes to listen to the band that was playing on the street, and then started for home. As they rolled along the smooth, hard river road in the cool of the evening, Edith thought she would like to live in the country if she could always have such pleasant surroundings. Jim was a revelation to her. In place of the coarse, rough countryman that she at first had pictured him, she found he was the equal, and in some respects, the superior of her stylish city beau. She could not understand it. Why was he working on a farm like a common day laborer? I suppose he is a poor man, was her mental comment, and knows nothing about the luxuries of wealth, but he might find a better position where he would not have to work in the dirt.

"A penny for your thoughts," said Jim.

"I was just thinking," said Edith, "what a nice drive we have had. I don't know when I have enjoyed myself better than I have tonight."

"I'm very glad," said Jim. "Well, here we are at home again, Miss Hartsell. Goodnight."

Edith found her mother waiting for her and told her about her trip to the little city. These drives became quite frequent in the next few days, and Jim was becoming infatuated with the city belle. But he was doomed to a sudden awakening. One evening as Edith and her mother were out for a stroll they came near the dairy house, where Jim was attending to the milk, and stopped directly beneath the open window.

"Edith," said her mother, "it seems to me that you and Mr. Morgan are getting quite chummy. I hope there is nothing serious."

"O, don't have any fears about me, mamma. One must do something to pass away the time. It is all right in a way, but the idea of me marrying a man who works in the dirt! The sight of his great rough hands makes me shudder. Why, mamma, the man that I marry must have a good big bank account." And thus talking they moved on toward the house.

Jim had heard every word. For a moment he stood like one paralyzed. Could he have heard aright? She must do something to pass away the time. She despised him because he worked in the dirt, and the man she married must have a big bank account. "Why, yes," said he with a little bitter laugh, "I could fill that part of the bill. I have \$500 in the bank, and at the wages I am getting, \$25 a month, I guess I am not likely to be a millionaire right away. Well, I have taken my medicine. Now I will finish my chores and go to bed."

He lay awake a long time that night, thinking over the events of the day and planning for the future. He must find an opening where he could make his \$500 begin to do business for him. The scales had fallen from his eyes and he despised himself for being made the puppet of this city belle. I will show her, if I live, that Jim Morgan can count his dollars by the tens of thousands. This talk of hers pricks me like a thousand needles, but I am glad I overheard it. How shall I manage matters from this time on? I must never let her suspect I overheard her remarks. I shall be so busy from this time on that I will have no time for any more foolishness. It will be work, work, work, and watch for something to turn up, and, thus thinking, he gradually floated off into dreamland.

Chapter III.

"Jim," said Mr. Ulrich as they arose from the breakfast table the next morning, "we will have to cut up about 40 acres of corn to help out our hay crop, and we will have to have additional help to do it. If you can manage to get away today, perhaps you had better get some help and let them cut it by the acre."

"I think I know just the men to do it," said Jim, "and I will see about it today."

About the middle of the afternoon, he hitched up the colt to the buggy, drove up in front of the house, hitched and went around to the well for a drink of water. As he raised the lid to the tank his eyes rested for a moment on the little building called the wash house. There stood Hettie, with sleeves rolled up, washing vegetables. He could not help noticing the tired, worn look on her face, and he said: "Hettie, you are not feeling well, I am afraid the work is most too heavy for you since these city boarders came, but I suppose they will be going back to their home in a short time and then you will have it easier."

"O, I do not mind the work," said Hettie, "but then, I do feel sometimes as tho I would like a change. You have heard the old saying—that 'all work and no play makes Jack a dull boy!' I think that would apply to me as well as to Jack," said she with a little forced laugh.

A sudden thot came to Jim and he said, "I am going over to the Swede settlement to see about getting some men to cut corn. Can't you leave your work long enough to go with me?"

Hettie looked up in surprise. Then turning, her eyes rested for a moment on a hammock across the lawn in which was seated Miss Hartsell, reading the latest novel. "Why, Jim," said she, "I thot—" then she stopped and hesitated.

"O, yes," said Jim, "you thot I was going to take Miss Hartsell. Don't you see she is deep in her book, and then, too, you need the ride and she don't. Come, Hettie, you have not been riding with me for a long time."

"Why, you have not asked me to ride," said Hettie, "but if you want me to go I will. I believe a ride would do me good. I will be ready in a few minutes."

Hurrying into the house she told her mother of her intended ride, and was soon ready. Black Bess drew the buggy rapidly down the lane and out upon the highway. Soon they came opposite one of the large corn fields and Jim said, "This corn will soon be ready to cut and it is a splendid crop. I dare say that it will go 150 baskets to the acre. Crow Meadow always gives us big crops of corn. These high bluffs break the cold winds."

"Why," said Hettie, "I was just reading in the papers that corn is not maturing well and there probably would be a great shortage of seed corn. Do you think our corn will all mature?"

"No doubt of it," said Jim.

After a short pause Hettie continued: "If there should be a shortage of seed corn all over the state it would be apt to bring a good price next spring, would it not?"

"It certainly would."

"I believe if I was a man and had a few hundred dollars I would invest it in seed corn. 'Tis said that 'opportunity knocks once at every man's door.' If he hears it and opens the door, all is well, but neglected opportunities never return. I believe that right here is where a great many men make the mistake of their lives—they fail to see, and grasp their opportunities and then go plodding along the broad highway growling at their hard luck, when in reality they have only themselves to blame."

"Hettie," said Jim, "you are a wonderful girl. I would never have thot of this, and yet I believe you are right. Yes, this is my opportunity. I see it plainly enough now, but I would never make a success of it without your help. If you will assist me with that wise little head of yours I will furnish the capital and we will be partners. I feel that success will crown our efforts. Now, Hettie, please do not say no."

"Why, Jim, if you think my advice and suggestions would help you to carry this business on successfully, you certainly are welcome to all that I can do."

"Thank you, Hettie," said Jim, pressing one of the little brown hands caressingly between his broad palms, "and now we must settle on some plan to carry on the work. I have just \$500 in the bank at Lacon. It's not a very large amount to do business with, so we will have to commence in a small way, adding to our capital from the profits of the business. Now, Hettie, here is where your work will come in. We must handle our little capital in such a way as to cover as much ground as possible. The question is—how shall we proceed?"

"About how many acres of corn do you think there are on Crow Meadow?"

"Probably not far from 200," said Jim.

"And about how many bushels of seed corn will it average to the acre?"

"I think we can safely say 25 at least," said Jim.

"Then," said Hettie, "that would mean 5,000 bushels of seed. But how are we to get possession of all this corn with only \$500 to pay for it? And then there is another thing to be taken into consideration—will the men who own this corn be willing to sell? There are only two men besides father that own Crow Meadow. I think there will be no trouble with father. He will be glad to help you—"

"Us, you mean," corrected Jim.

"Have it your own way," said Hettie. "Of course we do not want anything but the seed corn, so we will probably have

to pay them something extra for sorting it out."

"That can be managed all right," said Jim. "The wagon box can be divided, and when they are husking, the seed corn can be thrown in one end and the common corn in the other and then it can be cribbed by itself. The first thing to be done is to see these men and buy the corn, or rather bargain for it. If we succeed in this we must draw up a contract with each one, agreeing to take all the seed corn that he has at a fixed price per bushel, paying a certain amount down and the balance on delivery, which must be any time that we say before the first of next March."

"I think your plan will work all right," said Hettie, "but there is one very important item you have overlooked, and that is advertising. The sales will all depend on that. I would suggest that \$100 be set aside for that purpose."

"That seems like a large sum," said Jim, "to put into advertising, but I guess it will be all right. Well, here we are at the Swede settlement."

The men that Jim had in mind were seen and were hired to cut the corn. Then Black Bess was headed towards home and given a free rein. She made the few miles quickly and as Hettie was hurrying up the walk toward the house she passed the hammock in which Miss Hartsell was seated reading. The girl glanced up at Hettie's bright, animated face and said, "Were you out riding?"

"Yes," said Hettie, "I rode over to the Swede settlement with Jim and I feel so much better. My head has stopped aching and I feel rested."

"Yes," said Edith, "no doubt you enjoyed the ride, for Jim is very agreeable company."

Hettie made no reply but hurried into the house, changed her dress and proceeded at once to the kitchen to help her mother with the supper work.

"Why, Hettie," said Mrs. Ulrich, "I was not expecting you back so soon. Did you enjoy your ride?"

"Never had a nicer ride. The roads are as smooth as glass, no dust, and just cool enough to be refreshing. Mother, you know what the papers say about corn being a short crop and not maturing, and the shortage there will be in seed corn. I was talking to Jim about it this afternoon and he said the corn on Crow Meadow promises a big yield. He thinks it will go 150 baskets to the acre, and now what do you think he proposes to do?"

"Why," said Mrs. Ulrich, "what scheme has he worked up?"

"He says if I will help him to carry it thru, he will buy all the seed corn on Crow Meadow and hold it until wanted in the spring. He thinks there is a lot of money in it and I believe Jim is right, and I told him I would help him all I could. What do you think of the plan, mother?"

"I think you had better talk it over with father and see what he thinks about it."

Hettie lost no time in laying the whole matter before her father and asking his advice.

"Why, Hettie," said he, "I believe that plan will work all right. There is nothing to lose and everything to gain. If the corn cannot be sold for seed it will be worth the purchase price, and it looks like a good investment. I should like to see Jim succeed."

"And you will help him by letting him have your seed corn at a fair price, won't you, father, and he will pay you for it as fast as it is sold?"

"Why, Hettie, you seem to be greatly interested in this deal of Jim's."

"O, yes, I promised to help him all I could."

"You did," said Mr. Ulrich. "Then I believe this deal will be a success, for my little girl has more business ability than lots of men I know."

In the course of the next week Jim called upon Mr. Earl and Mr. Vandine, and in company with them looked over the standing corn on their farms, which was mostly matured. After some deliberation on their part they accepted Jim's offer of 50 cents per bushel for the seed, they to husk and crib it. A contract was drawn up to that effect. Jim gave each one a check on the bank at Lacon for \$150, to be applied on the purchase price, taking a receipt for same. Corn was to be delivered to Jim not later than the first of March.

A few days later, as the family were gathered around the cosy supper table discussing the events of the day, Mr. Ulrich, turning to Jim, said, "Hettie tells me you have turned speculator and propose to make your pile out of seed corn."

"O, Hettie and I have a little plan of

For Trap and Field



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In a class by itself because it has three indispensable superior features. 1. It is Solid Breech. 2. It is Hammerless. 3. It loads and ejects from the bottom. No other Pump Gun made has all three vital improvements. The Solid Breech does away with a hammer to catch, keeps dirt out of the action and insures safety. The ejection at the bottom prevents the ejected empty shell from crossing the line of sight.

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KEEP OUT COLD AND WIND WITH A BEACH JACKET



It is warmer than an overcoat, as cheap as a sweater, and wears like iron. While playing or working in wind or cold you will always be comfortable with a Beach Jacket.

It is made of a specially knit woolen cloth of handsome dark blue brown with gray stripes, is reinforced with specially prepared cold-proof lining, has strongest button fasteners, is braided-bound to prevent wearing. You can wear it over your vest and under your coat, or in place of an overcoat.

It is furnished, a vest without collar at \$1.50; a coat without collar, \$3.00; a coat with collar, \$3.50. If your dealer cannot supply you, we will ship prepaid upon receipt of price. Address Dept. B for our catalog.

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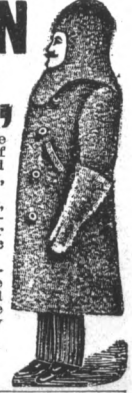
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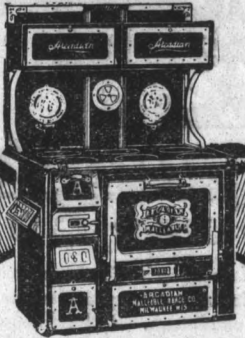


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MENTION THE MICHIGAN FARMER when writing to advertisers.

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ARCADIAN MALLEABLE NON-BREAKABLE RANGES

Save money—not just a dollar or so, but a good many dollars, year after year and they last a lifetime.

The ARCADIAN Range is made of malleable non-breakable iron and charcoal iron plates, riveted together in exactly the same way as a locomotive boiler, and so is lastingly airtight. That's why they are perfect bakers, why they cut down your fuel bill one-third.

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Write for our free booklet. It gives inside facts about range construction. It will help you pick out the range which will last longest, economize most on fuel, and which you can easiest keep clean and bake with. We will tell you all this in our interesting free booklet. Write for it today.

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The New Model No. 24 Marlin



Repeating Shotgun

This new 6-shot model is the simplest, surest, and fastest 12-gauge repeater made.

It has the solid top, side ejection and double extractors—special Marlin features of comfort and convenience. The closed-in breech keeps the action clean and the shells dry—keeps out rain, snow, dirt, leaves twigs and sand.

The new take-down construction allows you to take gun apart in ten seconds for cleaning or packing, yet the joint is always as firm and rigid as in a solid frame, non-take-down gun. The fat forearm fits your hand and helps quick operation.

The full choked guns are guaranteed close-shooting, hard-hitting guns, and are unequalled for ducks, geese, foxes and all long-range work.

The full choked guns are guaranteed close-shooting, hard-hitting guns, and are unequalled for ducks, geese, foxes and all long-range work.

A circular giving large illustration, with full description of this handsome new gun, sent free on request or with complete 136-page catalog for 3 stamps.

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FREE GOLD WATCH, RING and CHAIN

We give a Fine Gold Plated STEM WIND & STEM SET, Guaranteed Watch, Engraved Front & Back; Proper Size; also Gold Plated Ring set with 2 Sparkling Im. Diamonds, for selling 24 jewelry articles at 10c each. Order jewelry now; when sold send \$2.40 & we will send Watch, Ring and Chain. B. I. SPENCER & CO., Horton, N. Y.

WANTED—MAN thoroughly competent to handle place and produce eggs and chickens for market. Must be up-to-date. Address, giving qualifications and experience. F. A. GULLEY, R. M. D. 2, Godfrey, Ill.

our own along that line," said Jim with a laugh. "Nothing ventured, nothing gained, you know." Then he proceeded to give Mr. Ulrich an outline of what they proposed to do, and asked him what he thought of the plan.

"It's a good one," said Mr. Ulrich. "How came you to think of it?"

"O, I didn't think of it—at least, not at first. I must give honor where honor is due," said he, looking across the table to where Hettie sat.

"I don't know as the honor belongs to me," said Hettie. "I just mentioned what I had been reading in the papers about corn not maturing and the probability of seed corn being scarce, and Jim grasped the idea at once."

"Yes, I see," said Mr. Ulrich, "and I hope that success will crown the efforts of the Crow Meadow Seed Corn Association."

As had been predicted, the corn crop of 1907 did not mature except in a few favored locations, of which Crow Meadow was one. By January 1, 1908, it began to be apparent to all corn growers that seed corn would be a very scarce article, and each one began to look around to see where his next year's seed was coming from.

Chapter IV.

Mrs. Hartsell, with renewed health and strength, felt that she must soon return to her city home. She had enjoyed the hospitality of this country home, as she had never enjoyed an outing before. The quiet rest and pure air, coupled with beautiful scenery that stretched far away on all sides of the Ulrich home, had been a perpetual source of enjoyment, and the luxury of pure country food had a great deal to do in repairing her nervous breakdown. Fresh vegetables and fruits at all times, and the sweet, golden butter, fresh from the dairy every day—these were things that she knew she would miss greatly when she had returned to her city home.

But Miss Edith was getting restless. Country life, she said, was getting monotonous. She wanted to get back into the ceaseless whirl of fashionable life again. She did not seem to understand country people. She and Miss Hettie were never very intimate. There was nothing in common between them. Their likes and dislikes differed as much as light and darkness, and as for Jim—he was a greater mystery still. He seemed to avoid her. He always treated her civilly, yet there was a certain coolness that she could not understand. She felt she must have offended him in some way, but how she did not know. She told herself over and over again that she did not care, yet whenever she saw Hettie and Jim drive off for a ride, she could not help feeling resentful. Why did he always take Hettie? Did he mean what he said at the supper table about the seed corn deal or was he just joking? What if he should make thousands of dollars in this seed corn deal? If he were rich, what then? Would it make any difference in her feelings toward him?

Her musings were cut short by her mother, who said, "I think, Edith, that we had better return home in a day or two."

"I am glad of that mother. I have had enough of country life for once."

In a few days the mother and daughter left for their city home. For some time the financial skies had been filled with dark shadows and they found Mr. Hartsell in an uneasy state of mind. Firm after firm in the great city had collapsed. Money was disappearing as if by magic and could not be coaxed from its hiding place, even by the most astute financiers. Mr. Hartsell was one of the first to feel the shock. He had large holdings in city real estate. He struggled along for some time. Expenses were cut down to the lowest point, and by selling some of his holdings at ruinous prices, he hoped to be able to weather the storm, but at length the crisis came. He must have \$10,000 to meet maturing notes or within thirty days he would be bankrupt. He could not defer payment longer than April 1, 1908. He told his wife of the danger that threatened him, and gloom and despondency filled the home.

(Continued next week.)

Why should not the minister use his sermon to entertain, to please, to amuse, to create fellowship, and a responsive chord between himself and his audience? Why should he formally announce his text? Why should he announce his text at all? Why not just talk in an informal, chatty way and let the point of his lesson, if there is any, be impressed subconsciously?

IN MIDNIGHT WATCHES.

BY ALONZO RICE.

When I lay me down to sleep,
I do not fear the dark;
I know there is an eye will mark
Thru midnight watches deep.
I know from balconies of blue,
God's holy angels calmly gaze,
And earth, to their unclouded blue,
Reveals its hidden ways.
Altho the sunshine is withdrawn,
I know the world to meet the dawn
Is swiftly, surely speeding on
Thru midnight watches deep.

When I lay me down to sleep,
His kind protecting arm
I know will shield me from all harm,
Tho midnight tempests sweep,
And when the shades of night approach,
The toils and cares I then forget;
No foot of foe can encroach
On bounds His love has set.
His "Peace, be still," the waves obeyed;
He said, "'Tis I, be not afraid;"
I sail life's ocean undismayed,
Tho midnight tempests sweep.

KINKS.

Kink I.—Four-Letter Word Square.

No. 1 means to pull; 2, a contest; 3, a certain amount of land; 4, a nuisance which grows everywhere.

Kink II.—Biblical Conundrums.

No. 1. What character in the Old Testament came to an end, by which no other person ever died, and a portion of whose shroud is used in every household? No. 2. What character in the Bible lived for a short time in a place not built by hands, and where man never lived before nor after?

Kink III.—Riddle.—I have a face, a back, a good figure, insides, hands, and I strike; legs and I run. Also like a human being I sometimes get "keyed up;" I can not talk nor yell, yet I can give an alarm. And again, like a human being I can prove my mettle. Yet I have no animate being. Tell me what I am.

Prizes for Straightening Kinks.—To the sender of each of the ten nearest correct answers to the above Kinks, we will give choice of a package of 50 post-cards representing a trip around the world, a copy of "Concrete Construction on the Farm," or a fountain pen. Where contestant or some member of his family is not a regular subscriber a year's subscription (75c) must accompany answers. Answers must not reach us later than Nov. 27, as correct solutions will be published in issue of Dec. 4. Address answers to Puzzle Dept., Michigan Farmer.

Answers to Kink of October 2.

The missing words are: 1, Hallowe'en ("hallooin" about the neighborhood); 2, goblin (gobblin); 3, gnome ("No'm, Aunt Sarah"); 4, witches ("which is to say"); 5, sprite ("spry t' she"); 6, ghost ("goes to"); 7, ruin; 8, gate; 9, gate; 10, fairy ("for fair he hasn't"); 11, dark; 12, fairy; 13, shock; 14, witches; 15, elves; 16, brownies; 17, fairies; 18, goblins; 19, gnomes; 20, spooks; 21, sprite; 22, trystings.

There was no correct answer received, but Ward Cook, Pittsford, Mich., had all answers correct but one, the word (gown) in place of (gate), and we are going to give him a prize.

How to Settle the Range Question.

The average housewife has pronounced ideas on the subject of ranges and in the majority of homes when the question is discussed the last word is always conceded to the housewife who must use it. To her, the perfect range is that one which meets her every requirement. Whatever other good points it may have, it must be a perfect baker 365 days in the year. It must be a good cooker and economical in its consumption of fuel. These are points which she wants to be sure about before she invests money in a range of any kind. After she has satisfied herself that it meets all these requirements, she wants to make sure that it is durable; she doesn't buy a range every day in the year. Before deciding on a range the wise woman will examine closely into the merits of the Majestic, a "Range with a reputation." The body of the Majestic is made of charcoal iron, which gives it wearing quality. All top doors and frames are made of malleable iron—they won't break, crack or rust. It is completely lined with pure asbestos—thus the oven can be heated quickly with about half the fuel used in the ordinary range. It has a 15-gallon all-copper reservoir which touches the fire, giving boiling water in a very few minutes. If your dealer doesn't handle them write Majestic Mfg. Co., St. Louis, Mo., for their booklet, "The Story of Majestic Glory." Mention this paper.

Farm Economy.

The farmer, business man, or manufacturer equipped to conduct his business on an economical, sound, progressive basis, is the one that succeeds best. One of the most important pieces of machinery which should be included in his first equipment is a high-grade, scale for how can he tell whether he has received the highest value for his product unless he knows exactly the quantity he had to sell in the first place. How can the farmer be sure that he is using the most fattening feed for his hogs or stock until he has tried different combinations of fodder and grain and carefully noted the results by occasionally weighing his stock under his own local conditions. A scale of accurate and reliable is of inestimable value, but if inaccurate it is worse than none. Cheap scales are not so carefully or correctly constructed as high grade scales, so that the chances are against accurate results in cheap scales. For inside facts in regard to the construction of high grade scales, send for the literature mentioned in Fairbanks, Morse & Co.'s advertisement which appears in this issue.

To Stop a Cough In a Hurry.

With this recipe you can make a pint of cough remedy at home in five minutes. A few doses usually conquer the most obstinate cough. Simple as it is, no better remedy can be had at any price.

Put 2½ oz. of Pinex (fifty cents' worth), in a clean pint bottle, and fill up with Granulated Sugar Syrup, made as follows: Take a pint of Granulated Sugar, add ½ pint of warm water and stir for 2 minutes. Take a teaspoonful every one, two or three hours. The taste is very pleasant—children, take it willingly. Splendid, too, for colds, chest pains, whooping cough, bronchitis, etc.

Granulated Sugar makes the best syrup. Pinex, as you probably know, is the most valuable concentrated compound of Norway White Pine Extract. None of the weaker pine preparations will take its place. If your druggist hasn't the real Pinex, he can easily get it for you.

Strained honey can be used instead of the syrup, and makes a very fine honey and pine tar cough syrup.

Don't Wear a Truss



C. E. BROOKS, the Discoverer of the modern scientific invention, the wonderful new discovery that cures rupture will be sent on trial. No obnoxious springs or pads. Has automatic Air Cushions. Binds and draws the broken parts together as you would a broken limb. No salves. No lies. Durable, cheap. Pat. Sept. 10, '01. Sent on trial to prove it.

Catalog and measure blanks mailed free. Send name and address today.

C. E. BROOKS, 1445 Brooks Bldg., Marshall, Mich.

EVERY YOUNG FARMER

Can become a prosperous salesman and make BIG MONEY—RIGHT AT HOME. No experience needed. No investment required. If you want to get ahead, we have such a liberal offer to make you that you will wonder. Our plan of setting young farmers up in business, with a big variety of cloth samples and merchandise, ALL FREE, is making hundreds RICH. Think of making \$25 to \$40 a WEEK by doing just what city salesmen do—easiest kind of work—nothing like chores or following the plow. It's like PLAY. YOU RIDE AROUND DRESSED UP, WITH A HORSE AND BUGGY. When you write we will make you an offer on fine clothes for yourself that will astonish you and will name you such low wholesale prices on men's fine clothing, that you will be surprised. Be sure to write before we get anybody, and you will get a WONDERFUL OFFER. As soon as you are appointed you make a profit on every dollar we sell in your section. WE TURN ALL OUR BUSINESS OVER TO YOU. That's why our men make so much money. If you want a suit for yourself, ANSWER QUICK before we get anyone, and get our great inducements. If you want us to start you in business, tell us all about yourself. Address Dept. 407 American Woolen Mills, Chicago, Ill.

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LEARN AUCTIONEERING

Trained competent men make big money. JONES NATIONAL SCHOOL OF AUCTIONEERING teaches you how. Enter November 15. No better time. The International Live Stock Exposition is held in Chicago during this term and each student is given four days free admission. The opportunity of a life time to study all the leading breeds of stock and to hear the most noted Auctioneers in the world. Write for free catalogue today. Address CAREY M. JONES, President, 2856 Washington Boulevard, Chicago, Ill. Wanted Agents, to sell the Farmers' Account Book. Quick seller. Big inducements. Exclusive territory. Address L. L. Syphers, Fort Wayne, Ind.

WANTED—Men to learn barber trade. Barbers wanted daily. Tuition and tools \$25. Catalog free. MICHIGAN BARBER COLLEGE, 37 East Congress Street, Detroit, Mich.

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

AGENTS—IF I KNEW YOUR NAME, I would send you our \$2.19 sample outfit free this very minute. Let me start you in a profitable business. You do not need one cent of capital. Experience unnecessary. 50 per cent profit. Credit given. Premiums. Freight paid. Chance to win \$500 in gold extra. Every man and woman should write me for free outfit. **JAY BLACK, Pres., 407 Beverly Street, Boston, Mass.**

AGENTS 200% PROFIT Handy, Automatic **HAME FASTENER** Do away with old lame strap. Horse owners and teamsters wild about them. Fasten instantly with gloves on. Outwear the harness. Money back if not satisfactory. Write today for confidential terms to agents. F. Thomas Mfg. Co., 845 Wayne St., Dayton, Ohio

OUR YOUNG MEN'S COLUMN.

THE QUESTION OF GOOD CLOTHES.

This is a question not so easily solved by the country young man as by his city contemporary for the reason that he is not so situated as to be able to keep in touch with the latest designs in materials and make-up, and again for the reason that, due to his more regular and healthy habits and hours, he is obliged to renew his wardrobe less frequently. But the country young man of today is not of the "homespun" sort, and is as particular and fastidious in his taste for "good clothes" as is his city cousin. But in the matter of buying his clothes he may lack in experience and opportunity, hence a few words on this, to him, important subject will not be out of place.

What to Buy.

Leaving the question of materials for future consideration, let us touch briefly upon the important factor of quality in the goods. This should be a first consideration, and while important to all is of even greater importance to the country young man than to his city contemporary, for the reason that he will wear his good clothes more out of doors and will thus expose them more frequently to the deleterious influences of sun, dust and occasional rain. For this reason, as well as because he will want them to wear to look well, and hold their shape and color, the material should be good. Only woollens, the threads of which are made up of long, strong fibers will fill the bill in this respect. Nor do they need to be of extra heavy weight. In fact, the shoddy goods are mostly heavy goods, because the short fibers from which they are made work up better in heavy cloth. Some of these have a very nice finish and look well when new, so it is quite essential that an examination be made as to the character of both the "warp" and the "woof" which is used in the manufacture of the cloth. Aside from his personal judgment, the manufacturers' trade-mark is a guaranty of quality which should not be neglected by the purchaser. It always pays to buy clothing bearing the manufacturer's trade mark, since manufacturers in this, as well as other lines, have a reputation to maintain, which they would not for a moment jeopardize by placing their name on a garment which would not give the purchaser satisfaction, since to do so would be to threaten, if not destroy, the popularity of their goods, and injure the trade which they have spent large sums of money to build up by persistent advertising. Thus the clothing bearing the manufacturers' trade-mark is much more apt to give satisfaction to the purchaser than "jobbers'" stuff, and the well advertised brands are to be depended upon for the reasons noted above.

Colors and Designs.

Probably most young men, tho to a less extent in the country than in the city, are possessed too strongly with the idea that "the clothes make the man," and in their effort to satisfy their vanity in this respect many earn the doubtful compliment of being a "dude." In the proper acceptance of this slang term, this does not mean that they are well dressed, but rather that they are conspicuously dressed, in a more or less flashy and inappropriate way. In the general acceptance or measure of the sensible and sane members of local society, such dressing is also generally accepted as an indication of a lack of "sense" or "brains" on the part of the offending young man. Generally, however, it is nothing worse than a mistaken idea of what constitutes a well dressed man on the part of the offender. He has yet to learn the lesson that the well-dressed man is appropriately yet inconspicuously dressed, and one who leaves with his associates a favorable impression of his personality rather than of his clothes. Thus the well dressed man avoids the extremes of fashion in color or design, yet does not scorn dame fashion to an extent which will make him odd or conspicuous. By this "middle of the road plan" true economy will also be practiced in the buying of clothes, since one extreme quickly gives place to another, while the more normal and stable colors and designs will, like the better materials, "wear" better and prove more satisfactory in the long run.

What is true of clothing in this respect is equally true of furnishings, such as shirts, ties, hats, socks and shoes.

A GIFT.

The soul that sings when skies are sad,
When nature in gray garb is clad—
That soul best serves both God and man,
Giving the best that mortal can.
The gift of happiness.

—Alice L. Webb.

Free Sample of Congo.

Careful buyers instead of making their decision in the hardware store while the dealer is talking, prefer to get samples and study the matter over quietly and thoroughly at home. In the case of roofings this is easily done. The United Roofings & Manufacturing Co., who make Congo Roofing, are willing to forward samples of all grades of their roofing, together with booklet telling about their famous guarantee bond, free of charge, to anyone interested. The receiver is under no obligation to buy. The manufacturers of Congo Roofing believe that their material stands investigation pretty well, and are satisfied to let it talk for itself. If you are in the market for roofing, you need not hesitate to ask the company to send you a free sample. Address the United Roofing & Mfg. Co., Philadelphia, Chicago or San Francisco.

Michigan Farmer's Club List.

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

EXPLANATION.—The first column is the regular subscription price of the other papers. The second column gives our price for a year's subscription to both the other paper and Michigan Farmer. The third column gives the price at which the other paper may be added when three or more are ordered. Example: We will send the Michigan Farmer and Detroit Semi-Weekly Journal for \$1.35. If, for instance, McCall's Magazine also is wanted, add it at 40c making total \$1.75. Any number of papers may be added at third column price if they are for a subscriber to the Michigan Farmer.

If you want the MICHIGAN FARMER THREE YEARS and the other papers one year add 75c to the second column price. For the Michigan Farmer 5 years add \$1.25. We do not send samples of other papers. Address the publishers direct.

Send all orders to the Michigan Farmer or through our agents.

We will take your order for any publication you want whether listed or not. Write for rates.

NOTE.—So long as a subscriber is on our list for one or more years he may order at any time any publication at third column price. So that a three or five-year subscriber does not lose the advantage of the reduced price if he wants any other paper next year or the year after.

Subscriptions ordered to Canada require postage. Write for rates unless postage is known, in that case include with order. Postage on Michigan Farmer alone to Canada is 1 cent per week.

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Times, Detroit	2 00 2 50 1 75
News Grand Rapids, Mich.	3 00 3 50 1 75
Courier-Herald, Saginaw, Mich. (inc. Sunday)	2 50 2 30 1 60
News, Cleveland, Ohio	2 50 2 55 2 10
Tribune, Bay City, Mich.	2 00 2 50 1 85
News-Bee, Toledo, Ohio	2 00 2 25 1 65
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Journal, Detroit, Mich.	1 00 1 35 75
Weekly Newspapers and Current Comment.	
Blade, Toledo, Ohio	1 00 1 05 85
Commoner, Wm J. Bryan, Editor, Lincoln, Neb.	1 00 1 35 65
Harper's Weekly, N. Y.	4 00 4 00 3 50
Cattle, Sheep Swine, Poultry, etc.	
America's Poultry Journal, Chicago (m)	50 1 05 35
American Poultry Advocate, Syracuse, N. Y. (m)	50 1 05 35
American Sheep Breeder, Chicago (m)	1 00 1 50 80
American Swineherd, Chicago (m)	50 1 05 35
Farm Poultry Boston, Mass. (s-m)	50 1 05 35
Gleanings in Bee Culture, Medina, O. (s-m)	1 00 1 45 75
Hoard's Dairyman, Fort Atkinson, Wis. (w)	1 00 1 45 1 00
Horse World, Buffalo, N. Y. (w)	2 00 2 00 1 50
Horseman, Chicago, N. Y. (w)	2 00 2 30 1 60
Jersey Bulletin, Indianapolis, Ind. (w)	1 00 1 60 1 00
Kimball's Dairy Farmer, Waterloo, Ia. (s-m)	40 1 05 35
Poultry Keeper, Quincy, Ill. (m)	50 1 05 35
Poultry Success, Springfield, O. (m)	50 1 05 35
Reliable Poultry Journal, Quincy, Ill. (m)	50 1 05 35
Shepherds' Criterion, Chicago, Ill. (s-m)	50 1 05 35
Swine Breeders' Journal, Indianapolis, Ind. (s-m)	50 1 05 35
Popular Magazines.	
American Magazine, (m)	1 00 1 50 80
Cosmopolitan, N. Y. (m)	1 00 1 50 1 00
Century Magazine, N. Y. (m)	4 00 4 30 3 85
Country Life in America, N. Y. (m)	4 00 4 00 3 00
Etude, Philadelphia, Pa. (m)	1 00 1 70 1 00
Garden Magazine, N. Y. (m)	1 00 1 20 75
Good Health, Battle Creek, Mich. (m)	35 1 00 80
Good Literature, N. Y. (m)	1 50 1 75 1 10
Hampton's Magazine, N. Y. (m)	4 00 4 00 3 50
Harper's Magazine, N. Y. (m)	1 50 1 75 1 00
Metropolitan Magazine, N. Y. (m)	1 50 1 75 1 00
Mechanical Digest Grand Rapids (m)	50 85 25
McClure's Magazine, N. Y. (m)	1 50 1 80 1 10
Musicalian, Boston, Mass. (m)	1 50 1 80 1 10
Outing Magazine, N. Y. (m)	3 00 3 00 3 00
People's Home Journal, N. Y. (m)	1 50 1 50 1 50
Red Book Magazine, New York (m)	1 50 1 95 1 25
Suburban Life, N. Y. (m)	3 00 3 05 3 00
Success, N. Y. (m)	1 00 1 50 80
World To-Day, Chicago Ill. (m)	1 50 1 50 1 00
Ladies' or Household.	
Designer, N. Y. (m)	75 1 30 60
Everyday Housekeeping, Salem, Mass. (m)	50 1 05 35
Harper's Bazar, N. Y. (m)	1 00 1 50 1 00
Housewife, N. Y. (m)	35 1 00 30
McCall's Magazine, N. Y. (m)	50 1 10 40
Mother's Mag., Elgin, Ill. (m)	50 1 10 40
Modern Presclia, Boston, Mass. (m)	75 1 30 60
Pictorial Review, N. Y. (m)	1 00 1 50 80
Woman's Home Companion, N. Y.	1 25 1 40 1 25
Religious and Juvenile.	
American Boy, Detroit, Mich. (m)	1 00 1 25 75
Little Folks, Salem, Mass. (m)	1 00 1 50 1 00
Sunday School Times, Philadelphia, Pa. (w)	1 00 1 55 85
St. Nicholas, N. Y. (w)	3 00 3 30 2 85
Young People's Weekly, Elgin, Ill. (w)	75 1 20 75
Youth's Companion, Boston, Mass. (w) (new or old)	1 75 2 50 1 75

(w—weekly; m—monthly; s-m—semi-monthly.)

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Those subscribing for the Michigan Farmer in combination with other papers are allowed premiums just the same as if the order was for the Michigan Farmer alone. One premium only for every Michigan Farmer order. Orders for other papers alone will receive no premium under any circumstances.

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- 2 The heavy flange plate with incurved edges sheds moisture.
- 3 Heavy, specially selected Prisco globes—crystal clear.
- 4 Patented flame expander gives 25 per cent more light.
- 5 Large brass burner, with one-inch wick ready for lighting. Not a cheap tin burner.
- 6 Patented wind-break inside of solid one-piece dome. "A Prisco Lantern don't sneeze."
- 7 Reinforced metal here—no raw edges to cut or scratch the hands.
- 8 These wire clamp guards hold globe secure when tilted back for trimming wick or cleaning burner.
- 9 The horizontal perforations in globe-plate keep wind from striking flame—therefore prevent flickering.
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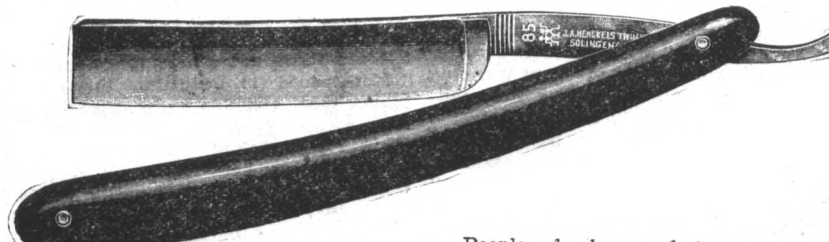
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THE MICHIGAN FARMER, DETROIT, MICH.

OF INTEREST TO WOMEN

The Jealous Spirit an Imp of Destruction.

JEALOUSY is often referred to as the "Green Eyed Monster," and it is indeed a monster, causing sorrow, trouble and unrest in every home it enters.

I received a sad letter a few days ago from a little woman living on a farm in this state, wherein she stated the misery she suffered thru her husband's unreasonable jealousy. "It has caused me to have trouble with my children," she writes, "and to be wretchedly unhappy with my husband. I moved away from a neighborhood where I had many intimate friends, thinking to please my husband and gain some peace, but he quarrels with me just the same. He pouts if any company comes and flies in a rage if I even speak to any one."

What a miserable, narrow-minded, selfish creature this husband must be. He continually lives in a state of miserableness himself, for the jealous person not only makes those whom he tyrannizes over unhappy, but he makes himself as much so. Jealousy is a great crime, it grows upon a nature remarkably fast and causes them to look upon their loved ones with a suspicious eye. It's greatest tendency is to magnify little things and imagine evil in all things.

But like all crimes it must suffer its penalties. Does the jealous person realize the position he holds in other people's eyes? They are ridiculed, scoffed at, disliked and shunned. They become des-

perately uncomfortable in their own beliefs, and unless they check the tendencies in the beginning, there is little hope for their ever becoming agreeable companions for any one.

To this wife I would say, that she labor hard with her husband to show him the error of his ways. Not scoldingly nor in a nagging manner, but quietly and convincingly show him how foolish is the stand he has taken. Be careful to give him no cause to arouse his temper and reason earnestly with him. Sometimes if a little strategy is used he can be forced to realize the absurdity of his position.

Some of the women readers of this paper might be able to give this sister some words of encouragement, or advice, in stating in a letter to us, how they had cured their husband of this evil, or what they think the best way to do so. But wives must remember that the jealousy is not always on the part of the husband. They sometimes make his life as miserable as he does their's, with their petty fits of jealousy. Try and overcome any temptations you may have that way. Remember that perfect trust and sincerity must be established between man and wife, or else love and harmony will fly away. If you find yourself growing jealous or having doubtful moments, put them from you and resolve to bar the mischief maker from your hearthstones.

ELISABETH.

GIRLS THAT ARE WANTED.

The girls that are wanted are good girls—
Good from the heart to the lips.
Pure as the lily is white and pure,
From its heart to its sweet leaf tips.

The girls that are wanted are home girls—
Girls that are mother's right hand.
That fathers and mothers can trust to,
And the little one's understand.

Girls that are fair on the hearthstone
And pleasant when nobody sees;
Kind and sweet to their own folk,
Ready and anxious to please.

The girls that are wanted are wise girls,
That know what to do and to say;
That drive with a smile or a soft word,
The wrath of a household away.

The girls that are wanted are girls of
sense,
Whom fashion can never deceive;
Who can follow whatever is pretty
And dare what is silly, to leave.

The girls that are wanted are careful
girls,
Who count what a thing will cost;
Who use with a prudent, generous hand
But see that nothing is lost.

The girls that are wanted are girls with
hearts;
They are wanted for mothers and
wives;
Wanted to cradle in loving arms,
The strongest and frailest of lives.

The clever, the witty, the brilliant girls,
They are very few, understand;
But, oh! for the wise, loving home girls
There's a constant and steady demand.
—Requested.

COMFORT IN THE FARM HOME.

A very considerable feature of the work of the Department of Agriculture in gathering information and putting it into popular form relates to the subject of the convenience and comfort of the farm home, and kindred matters in which the housewife is perhaps the most directly interested. The department has, in fact, quite a little library on the subject which it will be glad to furnish any woman wanting it, in whole or in part. Especially if any change in the house, any addition or a new house is contemplated, are these publications worth studying. "Be very careful," says a woman writing in one of the bulletins, "that in planning a home, you put more money into convenience than you do into size."

"If your house has been built without care to step-saving in the location of dining tables, sink and cupboards, a small table on rollers, with perhaps a lower shelf, will be found a great convenience. It can be used to advantage in setting or clearing the table. It is also helpful to have near the sink in dishwashing. Many a woman who is now tired of an evening would be fresh if she used such a wheeled table and a high stool at the sink and work table."

"A narrow kitchen," another author states, "is a great labor saver. One does

not realize this until she prepares a meal in the large, square, old-fashioned kitchen; the extra steps count as miles in a day." It is certainly just as important to supply the farmer's wife with carpet sweeper, washing machine, bread mixer, and other labor-saving devices and kitchen conveniences and to keep the knives sharp, as it is for the farmer to have a separator in the dairy, other modern appliances and sharp tools. The lightening of home burdens, thru means of a well equipped and hygienic house, by the use of household conveniences and by the proper understanding and systematizing of home work means that the homemaker and her family may have opportunity for something besides the daily tasks which may otherwise leave no time nor inclination for recreation.

Among bulletins on the subject which may be obtained from the department are Farmers' Bulletins 270 and 318 on appliances and conveniences for the farm home and about a dozen bulletins on the preparation and cooking of vegetables, canning, preserve-making and various problems concerned with the nutritive value of different foods. A request to the secretary of agriculture, Washington, D. C., will bring a list of these and other bulletins of more or less interest and value which can then be ordered by number and title without cost.

SOME THOTS FOR MOTHERS.

BY A MOTHER.

The remark that I heard a dear mother make recently, set me to wondering if some of us who are mothers are living in just the right way for future happiness.

This mother was disconsolate because the last one of her children had married and was going away where she would not see her very often. She said if this daughter went to the far west, as she was planning to do, she had nothing more to live for, and that she wanted to die. You say this mother was foolish and an extremist in her love for her daughter, but are there not others like her?

Motherhood is beautiful, there is no higher trust given to us, than to properly rear a family of children and prepare them for usefulness in this world, and for happiness hereafter. But we need not lose our own individuality in doing this work, and all interest in everything and everybody outside the home. We ought to prepare for the time when we shall be left alone, by improving, as much as possible, the mind and talents that have been given to us, and not live entirely in, and for our children.

How we love to meet some dear, old lady who can converse intelligently upon the current topics of the day, who seems to just enjoy living, and doing all the

good she can, not selfishly bemoaning her loneliness because her children have gone from the home nest. We never think of her age, years do not count, so much if one has lived aright.

Let us broaden our lives a little as the duties of the home are lightened by the decrease of the family. Let us engage in some congenial occupation that will take our minds from ourselves. Join some womans' club that has for its ideals some scheme for the uplifting of the human race. One need not carry club life to extremes, and so neglect home duties. There is no necessity to be utterly unhappy, even if impossible to go outside the home. I have known many cheerful, happy shut-ins who had learned to rely upon themselves for entertainment, but they had a "mind well stored," and they had been living their own individual lives, not merging them completely into the lives of their children. Neither had they made the proper performance of each household duty a shrine at which to worship, but had sometimes neglected trivial tasks, perhaps that they might have more time for self improvement, for making of themselves better wives and mothers, and better companions for their children, true comrades, to whom the children gladly went with all their joys and sorrows, sure of true sympathy and wise counsel. And now, with failing health and old age, they were not despairing, fretful invalids, but were a joy to all who came in contact with them.

Let us remember that too unselfish mothers make selfish children, let them do for us, and so give us more leisure to broaden and enlarge our own lives, and so be prepared for the inevitable parting that must come to most of us.

SALT RISING BREAD.

BY JENNETTE SISCO.

This recipe for salt rising bread has been used by my ancestors for 200 years and if directions are carefully followed anyone can have light, sweet, wholesome bread.

The day before you wish to bake take a teacup and spoon and scald thoroughly, with clean hardwood ashes, sal soda or common baking soda and water. Take three tablespoons of fine middlings, one teaspoon of granulated sugar, soda the size of a pea and half a teaspoon of salt. Put into teacup prepared as above, pour over it boiling water, beat until smooth and the consistency of cream. Cover with any small, perfectly sweet cover, set in a warm place where it will not scald the least bit. Stir occasionally until noon. It should be light at bed time, then set it where it will be cool. In the morning cleanse a quart bowl, as directed above, put into it one teacup of water as warm as it can be and not scald the flour, add soda and salt, as above, and enough flour to make as thick as bread sponge. Add two tablespoons of the yeast made the day before and set in warm

place until light. Sift as much flour as you wish for your bread, with your bread pan, make a cavity in the flour, take one pint morning's milk, add as much hot water, pour into the flour and make sponge, as for any bread, add the bowl of light yeast previously prepared, and beat thoroly, set in warm place to rise, being careful not to have in any draught or where the wind will blow on it. When light add a handful of salt, mix not quite as hard as yeast bread, mold into loaves and set in a warm place to rise. Have tins not quite half full. Let loaves rise until very full, put in an oven a little hotter than for yeast bread and bake for half an hour, for small loaves. The remainder of the first yeast can be kept in a cool place and used for the next baking, if in two or three days.

A PENNY PARTY.

An amusing and interesting game for an evening's party or little gathering is a penny party.

Each guest is handed a pencil and pad and a bright penny. On the pad is written the following questions but the answers are not put down. Each person is to answer as many questions as possible. Writing the answers opposite the question, a certain time is given to answer them in. The one getting the most correct answers receives a prize. When all have finished and the slips being gathered up, the hostess reads the questions and correct answer out loud.

Questions and Answers.

Q.—Why is a penny like a messenger?
Ans.—One sent.

Q.—What sort of a penny represents a spring flower? Ans.—Tulips (two lips on face).

Q.—What part of a penny resembles a stove? Ans.—Lids (eyelids).

Q.—Why is a figure on a penny like a term employed in early history? Ans.—Because it has a first settler. (Indian).

Q.—What fruit does a penny stand for? Ans.—Date.

Q.—What part of a fowl do you find on a penny? Ans.—Feathers. (Indian head dress).

Q.—What animal can you elucidate from a penny? Ans.—Hare (hair on head).

Q.—What part of a mountain does a penny represent? Ans.—Brow (brow of Indian).

Q.—What part of a wheel? Ans.—Rim.

Q.—Why is a penny like a policeman? Ans.—Because it is a copper.

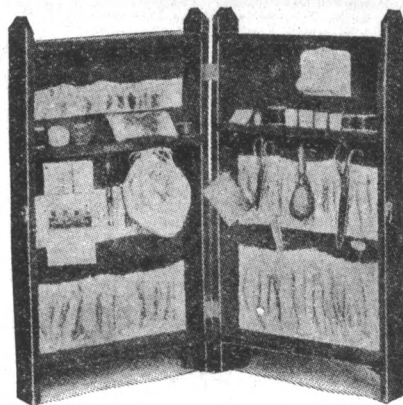
Q.—What part of a penny resembles a motor-car? Ans.—Shield (wind shield).

Q.—What part of a penny is like a river? Ans.—The mouth (Indian's).

Apply castor-oil on a little cotton batting to those troublesome corns, wear easy shoes, and note results. If very sore or painful, a little camphor gum or a few drops of laudanum added to the oil is a help.

Home-Made Conveniences For The Family Seamstress.

BY E. J. LYNCH.



Where there is no regular room in the house which can be set apart for sewing, a corner of a hall can sometimes be fitted up with the conveniences needed for satisfactory work. If the man of the house is handy, a sewing table similar to the illustration can be fashioned at comparatively small cost, or it can be bought ready-made. Such an article would be a most acceptable gift to the family seamstress on the anniversary of some special occasion.

This desk table makes a convenient cutting-out place. The lower drawers will hold the unfinished work, the upper, the hundred and one odds and ends, wax, whalebone, dress shields, braid, hooks and eyes, buttonhole scissors, tracing wheel, etc., etc.

Another gift which is more easily made and which will surely be appreciated by any bride or young housekeeper is a

sewing screen, which can also be made at home. A convenient size is thirty-six inches high, thirty-six inches wide when open and about five to six inches deep. About nine inches from the top of the frame a strip is placed across each panel which helps to strengthen it and also acts as a very convenient spool shelf. A row of screw hooks on the under side makes places for hanging scissors, or any other sewing tool that can be hung up.

The screen may be made of pine or oak. For the covering of the sides use burlap such, as is used in wall decorations. It comes in a variety of colors and is comparatively inexpensive. Finish the edges with upholsterers' tape and brass tacks.

The pockets on the inside of the screen can be made of cretonne, or sateen to match the burlap. These hold unfinished sewing, stockings that need darning, cotton and wool for mending, patterns, materials and all the small accessories of the modern sewing room. Such a screen can be carried upstairs or out to the porch or from room to room in half the time that is ordinarily spent in getting together the sewing materials.





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Housewives all over America testify to easier kitchen work, better baking, quicker cooking; time, strength and labor saved because of the many conveniences and superior service given by Jewel Stoves.

The smooth plain castings of the latest style Jewels—the large square ovens—the easy-operating Duplex grates—the accurate oven thermometers—the scientific, fuel saving construction, all are the result of over forty-four years experience building stoves.

Kent-Test Metal—the toughest, longest-lasting stove metal in the world, is used exclusively in Jewels. Every Jewel stove is designed on practical scientific lines for long service.

What is true of Jewel Cast Ranges is also true of Jewel Cook Stoves—Jewel Steel Ranges—Jewel Oak Stoves—Jewel Base Burners and Jewel Furnaces.

There are over 4,000,000 Jewel Stoves in use. There are over 10,000 dealers from whom you can buy. Every Jewel sold under a double guarantee—the dealer's and maker's. Buy a Jewel and you run no risk.

Write for our new **STOVE BOOK**—sent free on request. Shows illustrations from over a thousand styles and sizes of Jewels. Address Dept. K.

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for my manufacturing and exporting trade. Skunk, Mink, Muskrat and others. Top prices. Write for special quotations.
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International Fur Merchant,
CINCINNATI, O.

TOOTHsome SANDWICHES FOR EVENING REFRESHMENTS.

Celery Sandwiches.

Chop very fine, nice white celery and mix with salad dressing so that it can be easily spread, between thin slices of buttered bread. Chopped nut meats added, improve it very much.

Date and Nut Sandwiches.

Remove the stones and scales from the dates and break them up with a fork. Take half as much in bulk of nut meats, chopped fine, mix them with the dates and moisten with creamed butter. Add a dash of salt and spread between two thin slices of bread.

Olive Sandwiches.

Stone and chop olives—the large Queen olives are best. Stir in mayonnaise dressing and spread on thin slices of graham bread.

Veal Sandwiches.

Chop cold baked or boiled veal and mix with salad dressing or minced sour pickles, then spread between slices of bread as you would any filling.

Ham Sandwiches.

Chop cold boiled lean ham very fine, and mix it with a dressing made of a third of a cupful of melted butter, a teaspoonful of salt, a pinch of red pepper and the yolks of two hard boiled eggs, rubbed smooth.

Chicken Sandwiches.

Chop cold chicken very fine; heat some rich sweet cream and mix with it; season with a little salt, and spread between slices of buttered bread.

Fish Sandwiches.

Any cooked fish, especially salmon, well seasoned with salt and pepper, and mixed with a little chopped pickle and salad dressing makes an excellent sandwich.

Egg Sandwiches.

Remove the yolks of half a dozen hard-boiled eggs and rub smooth. Add a teaspoon of mustard, one-half teaspoon of salt, a dash of pepper and enough vinegar to make the mixture stiff. Add, if desired, the whites finely chopped. Spread between the slices of bread.

Strawberry Sandwiches.

These are easily prepared, being simply large strawberries cut in slices, covered with sifted sugar and placed between thin slices of a French roll, or biscuit, spread with butter. These must be made just before serving.

THE MODERN WOMAN.

Much is said today about "The Modern Woman," simply because she aspires to be self-supporting and able to take care of herself, if occasion requires. It is a fact that many places of business are now filled by women that were once filled by men alone and some have held up their hands in great horror, that women should dare aspire to places of such responsibility.

It was once believed that the minister of the gospel, the lecturer, the lawyer and the physician must necessarily be men, but today we find women occupying all of these places. I can remember when it was that they could have nothing but a man teacher in our rural schools. How many can you find occupying that position today? With us there are but few. The important office of school commissioner has for several years been filled by women, who have won high commendation for the efficient work they have done.

One woman I know of has shown remarkable tact as a business manager. Her husband died very suddenly and she was left with no one but a young daughter to help her. They had thirty-two acres of orchard comprising peaches, pears, plums, cherries and apples, and the trees were all laden with fruit. Friends advised her to sell the fruit on the tree, and so get rid of the work. She thought the matter over awhile, figured up the cost of labor, baskets, crates, etc., then decided she would harvest the crop herself. In due time she went to work and such a busy woman as she was, seemingly everywhere present, overseeing the entire work of picking, grading and packing. She knew every night where picking should be done the next day and the result was she received several hundred dollars more for her fruit than she otherwise would have done.

If there is a woman to be pitied, it is the one deprived of a husband, who has always taken all of the business cares upon himself, thereby leaving her wholly unprepared to carry the burden cast upon her. Every day we see evidences of the lack of business training, especially in our rural districts. Our young people graduate from the schools and go out into the world with what they think is a finished education, and they do not know

how to give a proper receipt for money, to say nothing of drawing a promissory note or understanding business contracts and to show the need of training in this direction, I will give an illustration by relating a little incident which came to my attention: A woman presented a check for payment to the teller of a bank. He passed it back to her with the request that she indorse it. The lady wrote on the back of the check, "I have done business with this bank for many years, and I believe it to be all right."

While this recommendation may have been very gratifying to the bank officials, it was not what was asked for. In the face of such a lack of knowledge of business methods, is it any wonder that the modern woman aspires to higher attainments?

While so much is said about the teaching of agriculture in our rural schools—would it not be well to also teach common business methods, so that our pupils irrespective of sex, would be able to at least indorse a check, or write a promissory note and compute interest on the same?

THE GOLDEN PUMPKIN.

"How dear to my heart is the old yellow pumpkin. When orchards are barren of stuff for pies."

When apples and peaches have both been a failure, And berries of no kind are greeting our eyes.

How fondly we turn to the fruit of the corn field. The fruit from our childhood we've learned to prize.

The old yellow pumpkin, the mud-covered pumpkin. The great fat pumpkin that makes such good pies."

The pumpkin is very ancient for it dates back to the time of Cinderella, and aided very materially in her getting to the ball. It holds high carnival in every Halloween entertainment, and occupies the place of honor at the Thanksgiving dinner, as one of the most delicious of pies. This festive "fruit of the corn field" has frequently masqueraded as apple-butter, but never, to our knowledge, "got into the soup" until recently. This is how it happened:

Pumpkin Soup: Take about half a pumpkin and cut in small squares, then boil. After it is soft, drain and mash thru colander. Then take about one and a half quarts of milk, and heat, put mashed pumpkin in, a little salt, and, if liked, cut up small pieces of stale rolls or wheat bread in small cubes and brown hard in butter. After you serve soup in plates then put in the rolls or bread. Squash soup can be made in the same way.—E. L. R.

KEEPING COLD DRAUGHTS OUT.

In many houses the windows and doors fit so loosely that there is a constant draught from beneath the doors and from both upper and lower sills of the windows. To shut this out, make long, slender bags of ticking or denim, having them as long as the width of the doors, or windows, and from one and one-half to two inches wide, when completed. Stitch the seams in each bag twice to make them strong, then turn and fill with sand, packing each bag as full as can be, without making it hard and unyielding. After fastening the remaining end, place before the crack.

As the sand will pack closely in any desired position, the bags can be pressed closely against the doors and windows, thus effectually shutting out all cold air. Being so firm and heavy for their size, the bags will be pushed out of the way easily, when the door is opened, without causing trouble, as is the case when a rug has been pushed against the door for the same purpose.—M. M.

NEW WAYS OF COOKING RED KIDNEY BEANS.

Dear Editor:—It seems that a great many people do not know how to prepare red kidney beans, so that I would send you some recipes which I know to be good.

Cook the beans until done after turning off the water several times. Then season with milk, butter, pepper and salt same as string beans.

To make a salad, cook the beans until done, then pour over a dressing made as follows: One cup of cream, one egg, one tablespoon of mustard, two tablespoons of vinegar, butter the size of an egg, pepper and salt. Cook in a double boiler until thick. Serve cold.

Baked, they are fine. Cook until then rub thru a colander, and for each quart of beans, add two beaten eggs, one cup of cream, pepper and salt, to taste. Bake one hour.—J. R. P.

The Difference

Coffee Usually Means Sickness but Postum Always Means Health.

Those who have never tried the experiment of leaving off coffee and drinking Postum in its place and in this way regaining health and happiness can learn much from the experience of others who have made the trial.

One who knows says: "I drank coffee for breakfast every morning until I had terrible attacks of indigestion producing days of discomfort and nights of sleeplessness. I tried to give up the use of coffee entirely but found it hard to go from hot coffee to a glass of water. Then I tried Postum."

"It was good and the effect was so pleasant that I soon learned to love it and have used it for several years. I improved immediately after I left off coffee and took on Postum and am now entirely cured of my indigestion and other troubles all of which were due to coffee. I am now well and contented and all because I changed from coffee to Postum."

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VALUABLE HOUSEHOLD CLEANSERS.

(Continued from last week.)

Benzine

Is one of the most volatile of the cleansers, evaporating very quickly, and for this reason is invaluable for cleaning the most delicate silks and woollens, especially if it is pure. It is largely used by professional cleaners for this purpose. Whole garments are immersed in vats of the benzine, instead of water. One must be very careful not to use it near a fire as it is very inflammable. It is also excellent to use in cleaning bath tubs, sinks, marble or anything that other cleansers are used for.

Javelle Water

Will take out the most stubborn stains and spots; but as one might suppose, it is also hard on the fabric. If the goods are rinsed thoroly after its use, it will seldom change the goods; but one need not be careless in this respect. To make javelle water, dissolve a pound of soda in a pint of hot water; mix a fourth of a pound of chloride of lime in another pint of hot water. Pour the two together and mix, let it stand until it settles, then pour off the clear liquid and put away in bottles until ready to use. Towels, handkerchiefs, etc., that have become badly soiled and stained should be soaked in some water in which a tablespoonful of the javelle water has been put, before washing them out. Often one gets a spot on a white skirt or waist and they do not care to wash the entire garment. By taking a little of the javelle water and applying it to the spot it will vanish, if scrubbed with a stiff brush. Mildew is perhaps the most difficult of all stains to remove, but by wetting it repeatedly with javelle water and keeping it exposed to the sun it will be easily removed. It should not be used tho until other methods of removing it have been tried, such as lemon juice and salt.

DOMESTIC SERVICE, AND WHAT WOMEN MAKE IT.

BY E. S. BALDWIN.

Domestic service is that branch of employment which is presided over entirely by women. It does not represent much, however, in favor of women as employers. When we consider the favorable conditions surrounding all classes of women that desire education, progress, and culture, the facts seem to prove that education has influenced women only materially in the discharge of their home duties, and culture has not yet finished its work. In the last quarter-century, every branch of service has made rapid strides; while domestic service has made little or no progress, and is now in a deplorable state.

The demand is for honest, respectable, competent women or girls, who desire kitchen, parlor, or chamber work, expecting just compensation for labor rendered. The laggard, who works because she must, is not what is wanted. The demand is for women that want to work for money, and kind treatment; and, if such employment be sought in a respectable family, it should not be degrading to the persons employed. To be sure, the one seeking domestic service can not go out much, except on Sundays, and in the early part of the evenings, without permission, because her daytime is her employer's, and at night, respectable people want to know where the inmates of their homes are, when it is time to close their houses for the night, whether they are guests or servants. This guardianship seems to be one of the principal drawbacks to domestic service, when it should be one of its greatest promoters. This kind of guardianship is usually called, by the working people, "being bossed;" and there is room for that on the subject. Reliable persons, of mature years, can readily judge how best to serve their employers without being guarded; but we do not always have mature, reliable people to deal with.

Every well-regulated household is managed by certain rules, which bring everything to its proper place, in its proper time. The woman that does the work must first be taught those plans, and special rules, governing each individual. This, too, is called "being bossed." There is no class of working women so well paid, everything considered, as the women that do housework, except stenographers, schoolteachers, and nurses. For this reason, they can dress tastefully; join some of the many societies for women, and save money for books, and other means of self-improvement. The woman that wants help for only a few weeks—when there is sickness, or other extra work—knows little about the trials of the woman

that needs help all the time. On the other hand, the girl that works only a few weeks in a place has a much harder time than the girl that remains years in one place. When the first few weeks are passed, she knows the house, knows the people, and knows what is expected of her; and if she is apt in her work, she has learned how to make everything come to place and time like clockwork.

The fair-faced, intelligent, wholesome American girl is no longer found in the kitchen; yet foreign help is very inadequate to the needs of the average American woman. Still, it is all that is obtainable in the cities, and even that is not to be procured in the country. The foreigner must have some one to talk to in her own language, or she would die of homesickness, and she should not be blamed. A friend of the writer, who hired a girl fifteen years old, only a few months from Poland, said: "The first sentence the girl ever made me understand in English, was a request for more wages." A girl of that age, only a few months from a foreign country, does not earn her wages for six months. Her training in American customs and language is worth more than her work. The writer has in mind a girl that left school at the age of fifteen, going from home to do housework. She remained at that work ten years, when she married a well-educated business man, who had a home fitted and furnished for her. The man had been the catch that all the girls, the country round, had fished for, and failed in landing. Of course, this girl left school when she had just passed her eighth grade, which is insufficient education to fit a woman for most places in life; but she always made it a point to work in the best places, spending some part of each week in self-improvement. When the man first sought her, she hesitated some months, thinking him insincere; but, after satisfying herself on that point, she gave a little time to him and more to self-culture. The result was a successful union, both spiritually and financially. This girl went bravely forth into the struggling world, receiving polish from the friction of the world, while her more-favored sister walked over the world, being many times tripped by the efforts of those beneath her feet.

In next week's issue we will take up the question of who degrades domestic employment.

NEW AND USEFUL RECIPES.

BY NELSON A. JACKSON.

Pork Apple Pie.

Before placing the crust on the apple pie, which you are preparing, cut a paper thin piece of salt pork and spread over the fresh apples. In baking, the pork entirely disappears, but imparts rich and flavor to the pie.

Poor Man's Stew.

Cube or slice raw potatoes and boil until soft in small amount of water; add milk, pepper, salt, and tablespoon of butter, cook until the potatoes crumble, stir all together and allow it to thicken. Serve hot on slices of buttered bread or toast. The stew is easily prepared and very palatable.

Corn Chowder.

For four people, take a one-inch cube of salt pork and fry. When well tried out, add one medium sized onion and fry. Use the value of about six fair-sized ears of corn. Twenty minutes before serving, add two medium-sized potatoes cut into small cubes. Season to taste.

Plum Olives.

One of our neighbors had a large plum tree, the fruit of which persisted in rotting before ripe. She took the full grown plums and placed them in a strong brine for three weeks. The result was a fairly good substitute for olives.

LADY BALTIMORE CAKE.

This cake, which comes to us from colonial days, not only looks good, but is delicious.

White of six eggs, beaten stiff, one cup butter beaten to a cream, two cups sugar, one cup milk, three and one-half cups flour measured before sifting, two teaspoonsful baking powder, one teaspoonful of rose water.

Icing:

Two cups granulated sugar, one-half cup water—boil until it spins a thread. Pour the syrup over the beaten whites of three eggs. Add one-fourth pound each of almonds, raisins, figs and conserved fruits, and ice the layers while hot.

The quality of fruits and conserves used in the icing may be as varied as the fancy dictates.

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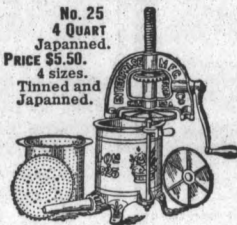
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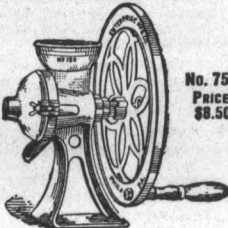
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The chapter on the United States Reclamation Service, illustrated with a comprehensive map, gives latest and most complete data in regard to irrigation in our western states.

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No. 8563.—A Useful Little Dress. This simple little model is unusually attractive and easily made. It is cut in one piece from neck to hem and fastens conveniently down the front. Two wide tucks over the shoulders give the necessary fullness and add considerably to the smartness of the mode. Gingham, linen, cashmere and serge are all suitable for reproduction. Pattern cut in four sizes, 8-10-12-14 years. Ten-year size requires 3½ yards of 44-inch material.

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STENCILING AS UNIQUE ROOM DECORATION.

BY MARY E. H. COVILLE.

When on my vacation this summer I saw many new and novel ways of room decorations and some interesting hand work. In fancy work stenciling is still quite a fad. No knowledge of painting or drawing is necessary, anyone can do this with a little practice and care. Pillows, scarfs, curtains, bed covers, evening gowns and parasol covers, are all being stenciled.

One lady has a room beautifully decorated in stencil, the work of her own hands. One can exercise their own originality in making designs. This room was first papered on side walls with plain cartridge paper in dull green. Above the picture rail to the ceiling was cream white, same as the ceiling, from this picture rail to ceiling was stenciled black-eyed Susans in conventional design; these were colored golden yellow with centers black and leaves lighter green than side walls.

The window curtains were muslin, plain hems at the glass, and on each side of the double window were curtains hanging straight down from the pole, and across the pole a shirred valance, the width of the cloth which was unbleached factory, all stenciled in the daisy design.

A window seat was made from a rough board, cushioned with yellow denim and a valance pleated across and fastened with brass headed tacks. Several cushions made it cosy. The bed was iron, painted white, with brass knobs, spread of unbleached factory with the daisy design stenciled all round, bolster the same. The tablespread was also stenciled, this was on green denim. The floor was pine and was painted with dark moss green. A rug braided of yellow, brown and black rags such as our grandmothers used to make, made a nice spot of color on the cool, green floor. The toilet set was of unbleached butcher linen, embroidered in daisies with white floss.

Always select your colors as to size and exposure of rooms. Southern or western, dark and cool; northern or eastern, warm colors.

To prepare your pattern for stenciling, take cardboard, stamp your pattern on the size you wish to use, then with a sharp knife cut around all the outlines of the design. If many colors are used a stencil will be required for each different color. Place your stencil on material,

or wall position desired, then fasten with thumb tacks, or hold in place with your hand, as most convenient. Have your paint and brushes ready, one brush for each color; these should be round and can be purchased at any hardware store. You may have to tie a string around your brush or cut some of the bristles off, to make them work well. Use artists' tube paints and thin with turpentine. Put your paints in small dishes, as the turpentine evaporates rapidly. Now dip your brush in your paint and with a round scrubbing movement, go over the design; be careful to wipe off the stencil each time it is used, and be very sure to get your spaces straight and distance even. I use a chalk line. When thru with your brushes for the day, always clean with turpentine and then wash thoroughly in soapsuds and rinse in clear, cold water and your brushes will always be in condition for good work.

When stenciling on thin cloth put blotting paper on the table under the material where your design lies; it will absorb the paint.

One neighborhood where we visited, the ladies had organized an embroidery club that, as they expressed it, another Christmas might not find them at the eleventh hour with nothing accomplished. These busy housewives met at the homes of the members as often as their home cares would permit. Refreshments were served, but only three courses were permitted, (not counting coffee and pickles), should a hostess break this rule a fine was imposed. These ladies not only exchanged patterns, recipes, and household economics, but sometimes a member brought a new book and read a few chapters, after which all joined in a discussion of it. Current topics were always discussed.

RUGS FROM OLD CARPETS.

BY E. E. R.

Most women are familiar with the fluff rugs made from ingrain carpetings which has passed its period of usefulness as a floor covering.

Not all, however, may have heard of a different method of transforming such material into good and serviceable rugs at about half the expense of the former. At least the kind which I am about to describe is quite new in this vicinity and as they possess some points of superiority over the others, they seem bound to become popular wherever introduced.

The carpet is cut in strips crosswise of the breadths and woven exactly the same as are rags in making a carpet of the old-fashioned kind. The only way in which these rugs differ from the fluff rugs before referred to is that they are not raveled at the edges which, in the other, makes the nap or fluff upon the finished product.

The rugs woven from carpet without fluffing are less heavy, one point in which they are superior to the others, which often are too cumbersome to be handled with convenience. Then, too, none of the material is wasted so that the same quantity goes much farther in making up in the loom.

The material should be cut about the width of ordinary carpet rags. The amount required for a rug depends upon its size, also upon the condition of the carpet. If very badly worn and thin more will be required than where a better quality is used. Warp should be left to knot for fringe at each end, or the fringe regularly employed for rugs may be purchased at the store. While a colored warp may be preferred to white, still the latter shows hardly at all after the weaving is finished, and even the white fringe looks well. If a color is chosen it will be wise to avoid brown as that rarely wears with satisfaction in warp, the dye seems to impair its strength. Those who have at some time selected brown warp for a rag carpet will probably have reason to remember this fact.

Small rugs may be made at home from ingrain carpet cut on the bias an inch wide, fraying the edges by hand and stitching the strips thru the middle to a piece of ticking, with the sewing machine. The strips should be placed close together, turning up the one last sewed in place so as to put the next one quite near it. The pieces do not require sewing together, merely place them end to end as the work progresses. If the strips run crosswise of the rug a different color may be put in for a stripe near each end.

Catherine had asked so many questions and her father was growing impatient. Finally he said, "O, Catherine, I can't answer half your questions." "I know you can't, father, but then I don't know which half you can't answer."

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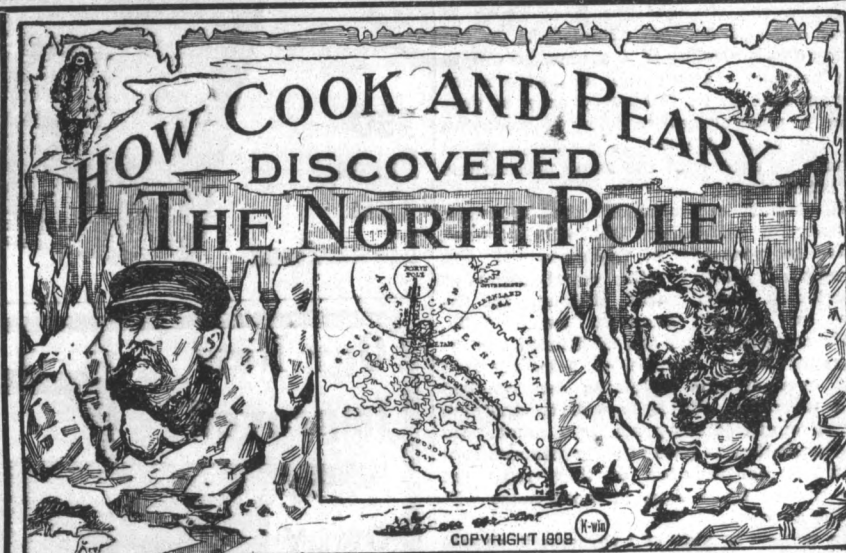


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Not in years has the world been stirred by any event, as by the actual discovery of the North Pole, by these two venturesome Americans, and whether you believe in Cook or Peary, or both, you will be interested in this great set of descriptive postcards giving a history of both expeditions. Many of the photos were taken early in the expeditions and sent back to civilization, others obtained direct from the explorers since their return.

It is such a splendid set that we will give every one of our readers a chance to get them absolutely free. The set consists of 50 beautiful celluloid finish duotone cards with description of each scene on back of the card. Read the list.

President bidding Peary "Bring back the Pole."—Peary's good ship the "Roosevelt" and through bidding him farewell at Oyster Bay.—The Steamer Roosevelt. The ship in which Peary sailed July, 1908, for race to the earth's top.—Peary on deck of the steamer Roosevelt just before sailing to discover the North Pole.—Capt. Bartlett and crew on the Roosevelt.—Peary in arctic dress, just as he appeared when he started to find the Pole.—Commodore Peary on Steamer Roosevelt enroute to the Pole.—Commodore Peary at work laying out his plans.—Mrs. Robt. Peary and her two children.—Peary's youngest son just prior to leaving Oyster Bay on his way to discover the Pole.—Peary and one of the Eskimo dogs on board the Roosevelt.—Peary's ship fast in ice packs in the polar region.—Almost superhuman difficulties overcome by Peary in reaching the Pole.—Halted by drifted ice.—How Peary stored provisions in his caches along his route.—Sight which brot joy to the heart of the Polar explorers.—The sun rises always on Feb. 19, after six months of night traveling under difficulties by Peary and Cook.—Peary's party in a hard climb.—Peary and the sailing master on board the Roosevelt.—The dog that helped Peary find the Pole.—Group of Peary's Eskimos.—Difficult camp in the arctic.—Steamer Roosevelt banked with snow.—Steamer Roosevelt after a hunt.—Showing animals killed on a hunting trip.—Steamer Roosevelt in the ice.—Dr. Frederick A. Cook in arctic dress.—The Steamer Bradley in ice.—Steamer John R. Bradley.—Dr. Cook starting on his dash to the Pole. Showing how the Eskimo dogs carried his food and other supplies.—Forging northward by sledges.—An Eskimo dog sledge and polar exploration.—An Eskimo man.—Ice hummocks in pathless waste.—Icebergs off of Greenland.—Greenlander Girl.—A polar camp showing snow houses such as were built by Dr. Cook.—Dr. Cook, showing how he fought hauling in a walrus. Incidents of Explorer Cook's experience in arctic region. The capture of a walrus, saving starvation to the parties.—Aluminum sledges used by Dr. Cook, for final dash.—Rudolph Franke, the last white man with Explorer Cook before he discovered the North Pole.—Dr. Cook's body guard, who were the last to be with him.—Interesting home group of Dr. Cook's wife and children.—Mrs. Marian H. Cook, wife of explorer and their children, Helen and Ruth.—Shows the Cook party, on ice floats in arctic seas.—J. R. Bradley, with supplies as he started for the Pole. How the steamer was packed with provisions and equipment.—Steamer John R. Bradley ready for the arctic voyage.—Musk ox. The animals that gave Dr. Cook food.—Showing Explorer Cook just prior to his trip to the Pole.—Dog train (Method by which Cook traveled to North Pole).—Combination picture entitled "Whose Little Girlie are you."—Shows Peary and Cook at the North Pole hoisting the Stars and Stripes.

To Get Them Free! No matter when your subscription to the Michigan Farmer expires, send us 75 cents for one year, \$1.50 for three years,

or \$2.00 for five years, and we will send you the complete set of 50 cards at once, postpaid, and extend your subscription from the time now paid to. If in sending your own order you will also get some friend who is not now taking the Farmer to order with you for a year or more we will send the cards to him, and an extra set to you for sending the order to us.

If you prefer to get trial subscriptions to The Farmer, the subscriptions for each club of 4 ten-cent trial subscriptions to Jan. 1, 1910, and they must be new subscriptions.

Better take advantage of this offer at once, as the demand for these cards is so great that the manufacturers will not make us any promises for prompt delivery after the first lot, which we have just received. Cook and Peary cards are Premium No. 190 and can be ordered in place of any Class A premium.

THE MICHIGAN FARMER, Detroit, Mich.

FOR THE HOME NURSE.

BY CHARLOTTE A. AIKENS.

In using tincture of iodine on the skin on any part not exposed to the air, it is better to dilute it about one-half with cold water before applying. It can then be applied continuously for several days in succession without fear of blistering.

In any kind of sickness where there is fever present the proper care of the mouth is important. A little borax and water or baking soda and water with a few drops of glycerine added, is excellent for a mouth wash and besides helps to keep the tongue and lips moist. It ought to be used two or three times a day. It can be used with a tooth brush or with a piece of rag to clean off the teeth and the mouth should then be well rinsed.

In giving alcohol during sickness be very careful to give no more than the doctor prescribes. There are some families in which whiskey and brandy are used for any and all forms of illness, however slight or serious. The more serious the illness, the more they give, acting on the principle that if a little is good more will be better. They think they must give it, "to keep up his strength." Very often he is so effectually kept up that he disappears entirely from the scene. Alcohol acts as a whip to the heart. It makes it work harder; makes it force more blood into the blood vessels, and thus for a time makes the pulse stronger and fuller. But the harder a heart works the quicker it is going to wear out and become exhausted. In too large doses alcohol is a strong poison to the nervous system, and in patients not accustomed to it, it is very easy to produce a mild or severe form of poisoning by its use. Alcohol is a drug, which should be used with the same precautions as other drugs.

A doctor recommends the following remedy for chilblains: Bathe the affected parts in peroxide of hydrogen (10 vol. strength), diluted with equal parts of previously boiled water, still hot, for fifteen or twenty minutes, twice daily. This treatment has the additional advantage of being capable of being carried out even if the chilblains are cracked and ulcerated, tho it is well to diminish the strength of the peroxide if much pain and irritation is produced by the application. A continuation of this treatment for two or three days in most cases will effect a cure.

In using peroxide of hydrogen it should always be remembered that there is a commercial peroxide used in great quantities for bleaching silks, cottons, furs and such things. This is a cheap adulterated article and should not be used in or around the body for medicinal purposes.

In all cases in which there is kidney trouble care should be used to avoid hot pickles, mustard, pepper, ginger, radishes, horseradish and such things. All these are likely to have an irritative action on the kidneys and are liable to aggravate the ailment.

It is especially important during cold weather to remember to flush the system with plenty of water. Lack of water or of fluids in the digestive tract is a common cause of constipation.

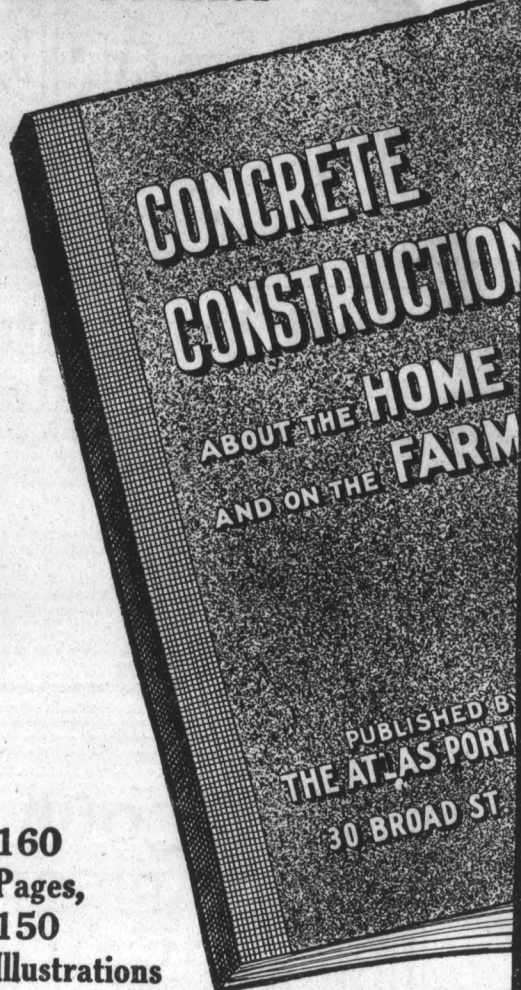
A bit of peppermint candy held in the mouth before and after taking makes a very excellent disguise for nauseous or bitter medicine, like castor oil, for instance, or epsom salts. These are two good old-fashioned remedies every mother who has growing children should keep.

CLEANING GLOVES.

Those who are unsuccessful when cleaning gloves with gasoline should try this plan, always working in the open air away from all fire or lighted lamps: Pour enough gasoline in a clean bowl to immerse the hands, upon which the gloves have been drawn and buttoned into place. Wash carefully, especially finger tips. When the gasoline looks soiled wipe the gloves with a clean, soft cloth, working toward the wrists. Have another bowl of gasoline ready and rinse thoroly. If badly soiled even a third immersion may be necessary. When clean wipe again with a fresh cloth, this wiping process being carried out after each immersion. After the last immersion continue wiping, renewing the cloth if necessary, until the gloves are practically dry, being sure not to rub hard enough to roughen the kid.

The cloth takes up the dirt which was loosened by the gasoline and which would otherwise dry on the kid as the gasoline evaporates. Hang the gloves in the air until the odor is gone. Later they may be hung before the oven door or over the register to hasten the deodorizing process, but not until the gasoline has entirely evaporated. MAE Y. MAHAFFY.

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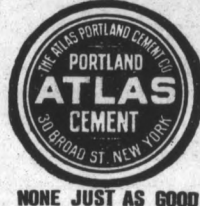
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Our \$12 Machine has a smaller head than on the \$15.00 machines but built on same principles. Plain, straight front, Golden Oak or Walnut, 5-drawer Box Top Table. Equals machines sold elsewhere at \$15 to \$20, and will do in a first-class manner, all kinds of family sewing. Guaranteed for 20 years and sold under our 90-day trial offer the same as the higher priced machines.

Attachments. With each machine we send free, full set of latest style solid steel Greist attachments, with complete accessories, needles and instruction book. Notice that our machines include all attachments which are not furnished with machines offered by others at a low price.

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to any station east of the Mississippi river, or south to Tennessee, purchaser to pay excess to points beyond these limits.

Automatic Lift furnished on Drop-head machines for only \$1 extra. Raising the leaf brings the head automatically into position. The lowest price ever made on such a device. It is strong, simple and very convenient.

Machines Sent Subject to Examination. For \$1 we will ship any machine C. O. D. subject to examination, purchaser to pay balance (less \$1 sent) and collection charges. Nothing really gained by ordering this way, as our guarantee and 90-day trial offer thoroughly protects every purchaser and the collection charges are saved by sending the full price with order.

Style A Has Automatic Tension Release—By simply raising the foot, it loosens the thread so work can be taken out, instead of pulling it loose with the hand in the old way.

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describing all machines in full as we have not room to give all their good points here. To pay more for a machine is to waste money. THE MICHIGAN FARMER, Detroit.



STYLE "C" HEAD.

MICHIGAN FARMER SEWING MACHINES

90 DAYS' TRIAL—20 YEAR GUARANTEE

Our new \$18.00 style "A" Drop-Head machine has cam threadtake up, giving better control of the thread, and making a better stitch than any other arrangement. Running it backwards will not break the thread. It has highest arm, side, disc tension, automatic bobbin winder with loose band wheel, high lift for heavy work, self-setting needle and self-threading throughout. This machine, has ball bearing shuttle lever, and hardened ground Roller Feed. The only machine having ball bearings in head of machine. Handsome swell front Golden Oak or Walnut 5-drawer Drop-head Table, carved drawers, ball-bearing drive wheel and steel ball-bearing pitman. A better machine cannot be gotten at any price. We will place this machine alongside of any made, guarantee it to do the best of work and refund money if the purchaser is not satisfied. Our guarantee means just what it says, and you run no risk in sending us your order.

Our \$15.00 Machine has high arm, style "B" head with needle bar take up, top tension, and in other respects the same as the \$18 machine head. Neat, plain finished swell front Golden Oak, or Walnut table, either 5-drawer Drop-head, or 7-drawer Box Top. Ball Bearings. A good serviceable machine in every respect, but plainer finish and less hand work than on the \$18.00 machine. Guaranteed for 20 years and sold under our 90-day trial offer.



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\$15

Drop
Head
or
Box
Top

Please send me your catalog of sewing machines. About three years ago I purchased one of your \$19.00 machines and I am well pleased with it and would use no other.—Mrs. F. W. Ford, Augusta, Mich., R. 21.

I bot a sewing machine from you the 25th day of July last, the Michigan Farmer No. 254517, which does good work and is satisfactory in every respect.—Mrs. Hugh Graham, Rosebush, Mich.

I received my sewing machine in good shape—no broken parts, and as far as I have used it I think it will prove satisfactory. Thanking you very much for your kindness, I remain, Mrs. E. Avery, Bellevue, Mich., R. 1.

THERE are fortunes in farming the right kind of land.

But why farm on land worth \$100 to \$150 an acre, producing but one crop a year, when you can get land of inexhaustible fertility in the San Antonio country at from \$25 to \$50 an acre, producing two or three crops every year. Land that costs a third as much—and crops three times as big.

Why burn up your profits in fuel, in heavy clothing, and winter feed for stock, expensive houses and barns, when you can live here in a land of sunshine and comfort all the year and save that money?

Why farm in a land of snow and ice that forces you to be idle nearly half the year, when you can farm in this ideal climate and have something to sell every week of every month in the year?

In the San Antonio country you have the very best of transportation, good neighborhoods, schools and churches, soil deep and rich, health and happiness, prosperity, and perfect climate.

Write for "Farm Facts" (free), a book of facts for farmers interested in Texas lands. It is the best "land book" published. Address

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ON ACCOUNT OF SICKNESS I will SELL 80 or 240 ACRES. Good stock and hay farm. **E. G. STONEMAN, Ashley, Michigan.**

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FOR SALE—80 acres choice unimproved land in Ogemaw Co. Other property. Nine months school, Sunday school, good neighbors. **Harry O. Sheldon, Alger, Mich., R.F.D.1.**

FARM—126 acres, 1/2 mile from station, good buildings, orchard, about 15 acres timber, about 40 pasture, balance gravelly loam. Long time. This is one of the best general purpose farms in the county. **S. W. PIERSON, Linden, Michigan.**

Truck and Dairy Farm, 100 acres on stone pike, 3 miles from Toledo with 200,000 people, 32 railroads, etc. etc., for sale on reasonable terms. A sure money maker. **J. H. BELLOWS, 1635 The Nicholas, Toledo, Ohio.**

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FARM FOR SALE. 126 Acres Chesterfield Co., Virginia. Richmond-Petersburg Electric station at property. 50 Acres cleared, balance well timbered, variety fruits, splendid well, two flowing streams. House and out-buildings excellent repair. Ideal building sites for suburban homes. Petersburg six miles—hourly service. \$6,500.00 part time. Address **H. J. ISMON, Petersburg, Va.**

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Stock and Crops Included.
Part Cash; Easy Terms.
8 fine cows, 1 heifer, thoroughbred bull, 2 good horses, 70 hens, hog, 40 tons hay, large quantity oats, corn, potatoes, and fruit, wagons, carriages, and all machinery and tools thrown in to settle quickly; 75 acres excellent soil, near nice village; 2 story 10-room house, big, new basement barn, outhouses; \$4000, part cash, takes all. For full details and traveling instructions, see page 141, "Strout's Farm Buyers' Guide No. 28". Copy Free. **E. A. Strout Co., Desk 101, Union Bank Bldg., Pittsburg, Pa.**

CORN IN VIRGINIA

Virginia soil is well watered and wonderfully productive. Her corn crop value per acre in 1908 exceeded that of the great western corn states of Indiana, Illinois or Iowa. Crops are good on all agricultural lands and abundant harvests are assured. Climate ideal. Excellent stock and grass lands. Good markets, roads, school's churches convenient and culture predominating throughout the state. We have many good Virginia farms (large and small) for sale in the famous Piedmont Section. Booklet and detailed facts concerning them upon request. Write Today.

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WILBUR MCCOY,
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(Continued from page 378).

Maryland the disfranchisement provision in the state politics, is the issue of contently to eliminate the negro as a factor in the state constitution, supported evi-

dentation. A war between two syndicates of gamblers in the city of Chicago resulted in two bombs being exploded there Sunday. Panics were created in theaters in the vicinity of the explosions. The warring concerns are both running in opposition to the law.

Twelve men were killed by an explosion of dynamite in a mine near Johnstown, Pa., on October 31. The cause of the accident is not known.

State troops have been called out by the acting governor of Kentucky to protect the voters and the officials in the election this week at Jackson, Breathitt county, where the contest for the election of local officers has been waged so insistently that the local authorities will not be able to cope with the situation should a riot start.

In a case involving the right to the title of a gold mine in the Philippine islands where a native and his ancestors had been in possession for 50 years during the Spanish regime and where an American had made a settlement in 1901, the supreme court of the United States decided that the Philippine having prior possession was entitled to the legal title of the land. The case will discourage impositions on the part of Americans and foreigners in the islands.

After soliciting the opinion of the many railroads of the country to determine the attitude toward a change of their book-keeping systems to correspond with the calendar year instead of the fiscal year, it is decided that no change will be made as the companies are practically unanimous in favor of the present arrangement.

On account of a discovery of gold in Lavaca county, Texas, where deposits of the precious metal assays from \$325 to \$1,200 per ton, land has suddenly taken a wonderful boom in price.

The public schools of Barren county, Kentucky, has been awarded a judgment of \$10,000 by the United States Supreme Court against Rand, McNally & Co., of Chicago, because of school books furnished by the concern that were not up to specifications.

It is possible that troops will be called out to protect the voters in exercising their privilege of franchise Tuesday at Gary, Ind., where a hotly contested fight has been waged prior to the election.

The army is about to begin a series of experiments in shooting at balloons, the purpose being that of providing equipment and skill for protection against balloons in time of war. In the knowledge of the department experiments of this kind have never been tried except by gun manufacturers of Europe.

President Taft is now on the last quarter of his trip, having made an extended call upon the people of Mississippi Monday, where he received the full measure of southern hospitality. He spoke at Columbus, Miss., and Birmingham, Ala., on Tuesday.

The postoffice department has increased the fee for registered letters to twelve cents, which covers the regular postage and the registering. In compliance with this change the department has also authorized the issuance of a twelve cent stamp.

A protest has been made to the war department by ministers of Troy, N. Y., against making the equestrian tests for army officers on the Sabbath.

The national geographical society has decided that Peary's evidence substantiates his claim that he reached the North Pole on April 9, of this year. He will be invited to lecture before the society in Washington in November.

An expedition of Alaskans has been formed for climbing Mount McKinley to find the records said to have been left there by Dr. Cook, in order to prove the claims of the Doctor that he made the ascent of the mountain in 1908.

The people of Montreal celebrated the centenary of steam navigation on the St. Lawrence River, Monday. Just 100 years ago on the first day of November the first steamboat sailed from Quebec to Montreal.

CROP AND MARKET NOTES.

Branch Co., Oct. 25.—Corn husking is now the order of business, altho some fields are not yet dry enough to crib. Much corn will be husked without cutting, or hogged down because it was so badly lodged by the storm of August 28 as to seriously damage the fodder and make the cutting of same too slow and expensive. Corn planted early on high ground, will yield well, but that on low ground or planted late is a short crop. Have seen but two or three fields of June clover cut for seed this fall and none of those are yet threshed. Wheat looking fine but that sown late has made but little growth as yet. Spring pigs now being marketed at a lively rate but at a much lighter average weight than usual, except possibly last year. New seeding of clover goes into winter in the best shape for years. Hay scarce and high. Corn fodder not as good as usual so much of it

Washtenaw Co., Oct. 25.—Washtenaw county, in common with most other counties of the state, has suffered from the very dry weather which has prevailed most of the summer. Pastures are and have been for some weeks, very short. Cows have been on full grain feed for some weeks but at this writing we are having some very nice showers which are having a beneficial effect on clover and wheat seedings. Potato harvest about completed—a very good yield of late potatoes, which are being rapidly marketed at 50c per bu. Apples mostly gathered; hand-picked fruit selling around \$1 per bu. All meats bring a price which assures a good profit in their production and have never, within the memory of the writer, been as profitable as the present summer, and altogether, old Mother Earth is rewarding her children in this season even better than usual.

If You Heard of a New Continent

You would undertake a long hazardous voyage and endure all the discomforts and privations of a colonial settler. You would gladly invest your years of best vitality for the sake of getting in on the ground floor. The Southwest is just like a new continent. It is the richest section of America with a soil so deep and powerful that single crops often pay the cost of a farm.

Think of Two Acres of Onions That Sold for \$700

Any business man will tell you that such land is worth \$1,000 an acre as a 10% investment. But you can buy miles of similar soil at \$40 to \$100, and you can not only grow onions on it, but cotton and sugar cane and garden truck. You can raise wheat and corn, forage crops and fruit. You can set it out in orchards, or sow your fields with alfalfa and take five crops from the ground in a year.

The climate is so even that agriculture is continuous. The farmer is out with his plow or cultivator from January to December. One farm in the Southwest is the same as having two in a section of interrupted agriculture where the ground can only be used a few months annually. The climate, the soil and the man are always on the job.

In the great Southwest there is a place for you. Write to me tonight and learn of the rich undeveloped sections of Oklahoma, Southern Missouri, Arkansas, Louisiana, Texas and New Mexico. I will send you literature about the section you prefer and tell you the opportunities for farming or for business.

Low rate Success Seekers' Excursions first and third Tuesdays of each month
JOHN SEBASTIAN, Pass. Traffic Mgr., 101 La Salle Street Station, Chicago, or 101 Frisco Building, St. Louis.

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A. E. GROVES, Secretary, HOUSTON, TEXAS
Reference—any Bank in Houston, Tex., or Crowley, La.

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ALONG THE CHES. & OHIO RY.
Virginia is fast gaining prestige as a poultry raising State. The diseases of cold climates are unknown, and her poultry products find ready sale at good prices in nearby Eastern markets. Virginia abounds in other productive and well watered farm lands. Her good roads and mild climate place her first as a state in which to locate. Write TO-DAY for low excursion rates and our booklet "Old Virginia" giving unprejudiced information. Address: G. B. WALL, Real Estate Agent, BOX X, D, CHESAPEAKE & OHIO RY., RICHMOND, VA.

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Locate now on the new railroad. Runs through the richest farming and trucking country.
Lands \$10.00 to \$25.00 per acre.
Rich farms now at low prices. Produce two and three crops per year, abundant water, timber, excellent climate. Write for catalogue and information: **B. E. RICE, AGENT, Industrial Department, Virginian Railway Co., Dept. B, Norfolk, Virginia.**

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DR. CANNADAY, 324 PARKE SQUARE, SEDALIA, MO

MARKETS

DETROIT WHOLESALE MARKETS.

November 3, 1909.

Grains and Seeds.

Wheat.—Until Monday the market held up well to the level of the past two weeks, but on that day the news of the bears was oppressive, and then and on Tuesday the strength of the bulls failed and the market declined over three cents during the two sessions. The cause is a readjustment of supply and demand. With the exception of the millers at Minneapolis who appear to be able to handle all of the wheat that is offered them and are willing not only to pay the going price but premiums for good grades, the manufacturers of flour are not so anxious as they were and in the southwest for the time being they are supplied and the grain is getting into the elevators and is being forwarded to the larger markets where it is encouraging the bears to pull values down. Farmers are more liberal sellers. The price for No. 2 red wheat a year ago was \$1.02 per bu. Quotations for the week are:

	No. 2 Red.	No. 1 White.	Dec.	May.
Thursday	1.23	1.23	1.24	1.25½
Friday	1.24	1.24	1.25	1.26½
Saturday	1.23½	1.23½	1.24½	1.25½
Monday	1.22	1.22	1.23	1.24½
Tuesday	1.20	1.20½	1.20½	1.22½
Wednesday	1.18	1.18	1.18½	1.21

Corn.—All last week the corn deal was strong and likely would have continued so had it not been for the weakening influence of wheat. The weather over a large part of the corn belt was ideal most of the past week and the bears used this news for hammering down values. The decrease in the visible supply amounted to nearly three-quarters of a million bushels, which change aided the bulls. A year ago the price for No. 2 corn was 72c per bu. Quotations for the week are:

	No. 2 Yellow.
Thursday	64
Friday	65
Saturday	64
Monday	64
Tuesday	63½
Wednesday	63½

Oats.—Values were at an advanced basis till Monday, when the influence of the wheat market and corn market worked a bearish feeling into the trade. On the local market the dealing is quiet and easy and the offerings are not large nor the demand overwhelming. A year ago the price was 51c per bu. Quotations for the week are:

	Standard.
Thursday	42½
Friday	42½
Saturday	42½
Monday	42
Tuesday	41½
Wednesday	42

Beans.—Nothing has happened to change the character of the bean market which, at the best, is only a nominal one just now, the buyers and sellers being unable to get together and make actual bargains. The latest news has not altered the impression that a large crop is in the hands of farmers and primary elevator men. Quotations for the week are:

	Cash.	Nov.
Thursday	\$2.10	\$2.00
Friday	2.10	2.00
Saturday	2.10	2.00
Monday	2.10	2.00
Tuesday	2.05	1.95
Wednesday	2.05	2.00

Cloverseed.—This market is active. Demand is good and prices are about the same as ruled a week ago, altho the margin has not been as broad this week as last. Quotations for the week are:

	Prime Spot.	Mar.	Alsike.
Thursday	\$9.00	\$9.30	\$8.00
Friday	9.00	9.30	8.00
Saturday	9.00	9.30	8.00
Monday	8.90	9.20	8.00
Tuesday	8.90	9.20	8.00
Wednesday	8.90	9.20	8.00

Rye.—Increased offerings produced a bearish sentiment and a decline in rye values the past week. The lower wheat market also influenced the dealing. Cash No. 1 is quoted at 76½c per bu.

Visible Supply of Grain.

	This week.	Last week.
Wheat	27,002,000	25,650,000
Corn	2,654,000	3,360,000
Oats	13,264,000	12,747,000
Rye	642,000	619,000
Barley	2,703,000	3,987,000

Flour, Feed, Provisions, Etc.

Flour.—Market strong, with prices advanced from 20@25c. Quotations are as follows:

Clear	\$5.80
Straight	5.85
Patent Michigan	6.15
Ordinary Patent	5.95

Hay and Straw.—Trade steady. Carlot prices on track are: No. 1 timothy, new, \$13.50@14; No. 2 timothy, \$12@13; clover, mixed, \$12@13; rye straw, \$7@7.50; wheat and oat straw, \$6.50@7 per ton.

Feed.—Market stronger than a week ago. Bran, \$24.50 per ton; coarse middlings, \$25.50; fine middlings, \$29.50; cracked corn, \$27; coarse corn meal, \$27; corn and oat chop, \$25.50 per ton.

Potatoes.—Farmers are offering potatoes quite liberally now and values are down. Michigan grown are selling in car lots at 43@45c per bu.

Provisions.—Family pork, \$25@26; mess pork, \$24; medium clear, \$26; kettle rendered lard, 15c; pure lard, 14½c; bacon, 17@18c; shoulders, 12½c; smoked hams, 14½c; picnic hams, 12½c.

Dairy and Poultry Products.

Butter.—All of the leading markets of the country hold firm and steady in the

butter deal, as is true of the trade here. Demand is firm and offerings are small, with prices ruling on last week's basis. Quotations for the week are: Extra creamery, 31c per lb; firsts, 30c; dairy, 24c; packing stock, 23c.

Eggs.—The amount of eggs coming to the market is small just now and values are going upward, an advance of ¼c having been made since the report of a week ago. Fresh eggs, case count, cases included, are now quoted at 25½c per doz.

Poultry.—This market has not been satisfactory. The amount of poultry coming to the market is not large and the quality is anything but desirable, consequently the demand does not support an active deal. Prices are lower than last week. Quotations for the week are: Hens, 10@11c; roosters, 9c; ducks, 12@13c; geese, 9c; turkeys, 15@16c; broilers, 11½@12c per lb.

Cheese.—Steady. Michigan full cream, 16c; York state, 17c; limburger, 16½c; schweitzer, 20c; brick cream, 17c per lb. Calves.—Choice to fancy, 10@11c; ordinary, 8@9c per lb.

Fruits and Vegetables.

Cabbage.—Steady. Home-grown, \$1 per bbl. Onions.—Domestic offerings, 70@75c per bu; Spanish, \$1.40 per crate.

Pears.—Common, \$1@1.25 per bu. Grapes.—Catawba, 14c; Niagara, 14c per 4-lb. basket; Concord, 16@17c per 8-lb. basket.

Apples.—Best grades, \$3@3.25 per bbl; common, \$1.50@2.50. Cranberries.—Cape Cod berries selling at \$2.25@2.50 per bu.

Quinces.—\$1@1.25 per bu. Vegetables.—Beets, 45c per bu; carrots, 50c per bu; cauliflower, \$1.25 per doz; eggplant, \$1.20@1.25 per doz; green onions, 12½c per doz; green peppers, 75c per bu; lettuce, 75c per bu; mint, 25c per doz; parsley, 25@40c per doz; radishes, 8@10c per doz; spinach, 60c per hamper; summer squash, 30c per box; watercress, 25@30c per doz; wax beans, \$3@3.25 per bushel.

OTHER MARKETS.

Grand Rapids.

Wheat is off 1c and other grains are practically unchanged. Dairy butter is up 1c and eggs have made a similar advance. In meats, dressed hogs are lower, being quoted at 9½@10c this week. Poultry dealers report a scarcity of turkeys, and young stock is up 1c. In fruits, grapes are nearly gone, some green ones selling Tuesday morning at \$1.50 per doz. 4-lb. baskets. Apples in shipping quantities range from 45@55c, tho \$1 is paid for choicest stock in bushel lots. Keiffers are the only pear left, and they are bringing 60@65c. Prices on the city market Tuesday were as follows: Potatoes, 45@50c; head lettuce, 50c bu; leaf lettuce, 7c lb; spinach, 25c pk; endive, 35c; parsley, 10c doz; radishes, 6c; cucumbers, 60c doz; cauliflower, \$1@1.50 doz; cabbage, 30@40c; celery, 12½c.

Quotations follow: Grain.—Wheat, \$1.18; oats, 42c; corn, 64c; buckwheat, 65c per bu; rye, 64c. Beans.—Machine screened, \$1.85.

Butter.—Buying prices, Dairy, No. 1, 25c; creamery in tubs or prints, 30½c per lb. Eggs.—Case count, 25c.

Apples.—45@55c; Keiffers pears, 60@65c; quinces, \$2 per bu; grapes, 11@12c per 8 lb. basket.

Vegetables.—Potatoes, 45@50c; onions, 50@60c per bu; cabbage, 30@40c doz; cauliflower, \$1.50@1.60 per doz; beets, 40c per bu; carrots, 40c; turnips, 35c; Hubbard squash, 1c lb; celery, 12½c; vegetable oysters, 20c doz; parsley, 10c doz; cucumbers, 60c doz.

Hogs.—Dressed, 9½@10c. Live Poultry.—Fowls, 10@11c; roosters, 6@7c; turkeys, 14@15c; spring chickens, 10@12c; spring ducks, 10@12c; young geese, 9@10c; young turkeys, 17@18c.

New York.

Butter.—Market is steady at unchanged values. Western factory firsts, 24@25c; creamery specials, 32@32½c.

Eggs.—Firm and higher. Western firsts to extras, 26½@31½c; seconds, 24@26c per doz.

Poultry.—Dressed, quiet. Western chickens, 15@21c; fowls, 12@16c; turkeys, 18@20c per lb. Live—Weak. Fowls, 13½c; western chickens, 13½c; turkeys, 12@15c.

Potatoes.—Choice stock not plentiful and in demand at firm prices. State and Michigan in bulk, selling at \$1.50@1.87 per 180 lbs.

Grain.—Wheat, No. 2 red, \$1.27½ per bu; corn, No. 2, 69½c for old; oats, mixed, 42½@43c.

Hay and Straw.—Best grades of timothy lower; market fairly steady at prevailing figures. Other kinds and straw, are firm, with oat and wheat straw advanced. Hay, timothy, prime, large bales, per 100 lb. 95c; No. 3 a 1, 85@92½c; shipping, 80@82½c; packing, 50@55c; clover and clover mixed, 70@95c; straw, long rye, 80@90c; short and tangled rye, 60c; oat and wheat, 45@55c.

Chicago.

Wheat.—No. 2 red, \$1.19@1.21½; December, \$1.04½; May, \$1.03½.

Corn.—No. 2, 61½c; December, 58½c; May, 60½c.

Oats.—No. 3 white, 39@40c; December, 39½c; May, 41½c.

Butter.—Prices show a slight advance for the week but restricted buying due to the higher range, is giving a weaker tone to the market. Creameries, 26½@30½c; dairies, 24@28c.

Eggs.—Market active, with the higher grades showing a gain of ¼c. Prime firsts, 27c; firsts, 25c; at mark, cases included, 18c per doz.

Hay and Straw.—Hay strong and slightly higher. Quotations: Timothy, choice, No. 1, \$14@14.50; No. 2 and No. 1 mixed, \$12.50@13.50; No. 3 and No. 2 mixed, \$10@12; rye straw, \$8@9; oat straw, \$6.50@7; wheat straw, \$5.50@6.

Potatoes.—Market weak and 3@5c lower under excessive receipts, which are mostly

of undesirable quality. Good stock rather scarce and in request at steady prices. Choice to fancy now quoted at 42@45c per bu; fair to good, 35@40c; poor, 33@37c.

St. Louis.

Grain.—Wheat, No. 2 red, \$1.23½@1.24; corn, No. 3 white, 62c; No. 3 yellow, 61c; oats, No. 2, 40c; rye, No. 2, 74½c.

Hay.—Timothy and clover-mixed continue quiet, with offerings still ahead of the demand. High-grade clover scarce and ready sale. Alfalfa coming in more freely. Timothy, No. 1, selling at \$14@15.50 per ton; No. 2, \$12@13; No. 3, \$9@10; clover, No. 1, \$14@16; No. 2, \$13; clover mixed, \$11@13.50; alfalfa quotable at \$17 for No. 1 and \$15@16 for No. 2.

Potatoes.—Offerings of northern-grown stock are liberal and, with buyers holding off, the market is dull and weak, even the best stock meeting slow sale. Prices are fully 5c lower than a week ago, with northern in car lots on track quoted at 37@40c for unripe and rough, to 48@50c for fancy, smooth, well-matured stock.

Boston.

Wool.—The attention of the wool dealers is now being absorbed in the coming crop from the southern hemisphere, but the dealing in domestic goods is active considering the small amount of wool in the bins of dealers. Prices are firm and sellers are making them, reduced bids for raw material not being considered by holders. Quotations for leading domestic fleeces are: Ohio and Pennsylvania fleeces—XX, 37c; No. 1 washed, 40@41c; No. 2 washed, 40c; fine unwashed, 27@28c; half blood combing, 37c; three-eighths blood combing, 36@37c; quarter blood combing, 34@35c; delaine washed, 40@41c; delaine unwashed, 33@34c. Michigan, Wisconsin and New York fleeces—Fine unwashed, 25@26c; delaine unwashed, 31@32c; half blood unwashed, 34@35c; three-eighths blood unwashed, 34@35c; quarter blood, 33@34c.

Elgin.

Butter.—Market firm at 31c per lb., which is last week's price. Sales for the week amounted to 657,400 lbs., compared with 679,200 lbs. for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

November 1, 1909. (Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of sale stock here today as follows: Cattle, 205 loads; sheep and lambs, 21,400 head; hogs, 20,800 head; calves, 1,800.

The cattle market today was more active than last week on all kinds and prices were strong. Cow stuff sold better today. The run from western markets today was not as heavy as last week but there was a heavy run in Chicago today and that may force some on this market. We do not look for much change in prices for a week or two. Cows, fresh, and springers sold from \$2@5 per head lower than a week ago.

We quote: Best export steers, \$6.50@7; best 1,200 to 1,300-lb. shipping steers, \$6@6.25; best 1,100 to 1,200-lb. do., \$5.40@5.65; medium 1,050 to 1,150-lb. steers, \$4.75@5; light butcher steers, \$4.25@4.50; best fat cows, (few fancy 5c), \$4.25@4.50; fair to good, \$3.25@3.75; trimmers, \$2@2.25; best fat heifers, \$4.75@5; fair to good do., \$3.75@4.25; common do., \$3.25@3.50; best feeding steers, 800 to 900 lb. dehorned, \$4.40@4.60; 700 to 750-lb. dehorned stockers, \$3.75@4; 600 to 650-lb. do., \$3.25@3.50; little common stockers, \$3@3.25; best bulls, \$4.25@4.75; bologna bulls, \$3.40@3.60; stock bulls, \$3@3.25; best fresh cows and springers, \$4.85@5; fair to good do., \$3.2@4.2; common do., \$2.3@2.8.

The hog market opened 5@10c lower on the good weight mixed, and about steady on yorkers and pigs. About everything is sold that got yarded in time for the market. Prospects only fair.

We quote: Mixed, medium and heavy, \$7.90@8; best yorkers, \$7.85@7.90; light yorkers, \$7.70@7.80; pigs, \$7.50@7.55; roughs, \$7.25@7.30; stags, \$6@6.50.

The lamb market this morning opened active but closed easy with about ten loads going over unsold. We look for about steady prices the balance of the week.

We quote: Best lambs, \$6.80@6.90; fair to good, \$6.50@6.75; culls, \$5.50@6; skin culls, \$4@5; yearlings, \$5@5.25; wethers, \$4.75@4.85; ewes, \$4@4.25; cull sheep, \$2@3.

Heavy calves suffered a decline today of fully 50c per hundred and they were hard to sell.

We quote: Best calves, \$8.75@9; fair to good, \$6.50@7.50; heavy, \$4@4.50; grass calves, \$3@3.25.

Chicago.

November 1, 1909.

Cattle. Hogs. Sheep. Received today 32,000 29,000 35,000 Same day last year .. 17,966 35,833 21,625 Received last week .. 65,335 109,981 131,372 Same week last year .. 56,598 160,651 84,402

Cattle were rushed to market week before last in such greatly excessive numbers that prices suffered sharp declines except for the limited offerings of strictly prime heavy beefs. The break in values caused greatly diminished receipts last week, and the decline was mostly recovered, sales being largely 25c higher. Fed steers went largely at \$5.25@7.50, there being the usual lack of choice beefs, and on Monday out of total receipts of 26,490 head none were prime enough to sell above \$8.70. The poorer grassy steers went for \$4@5, and on Wednesday there were fair sales at \$8.90@9.10, the best steers selling at the highest prices recorded on the open market since 1882, when the top was \$9.30. Butcher stock moved up with steers, and good sales were made of cows and heifers at \$3.25@5.50, a few prime heifers going at \$6@6.50. Cannery and cutters had a fair sale at \$2@3.20, while bulls sold at \$2.50@5, calves at \$2.50@8.50 and milkers and springers

at \$25@65. Stockers and feeders were active, stockers selling at \$2.90@4.50 and feeders at \$3.90@5.35. The call was mainly for a good class of feeders, and not enough of these were offered, not much being done above \$5. Western range cattle arrived freely and shared in the advance of natives, there being a good sale of range steers at \$4@7.60 and of cows and heifers at \$3@5.10. The top figure for range steers broke all high records for car lots. Range stockers and feeders were taken at \$3.25@4.75. The range shipping season is nearing a close, and after these cattle are all in there will be a much better chance for owners of natives of a corresponding class.

Today, Monday, cattle were in excessive supply, and while the limited prime offerings went at steady prices, other natives were very hard to sell, prices being largely 10@15c lower. About 9,000 western rangers arrived, and these were nearly or quite steady.

Hogs have been marketed sparingly here and elsewhere for still another week, and decidedly too few choice heavy butchering lots were offered to meet the urgent local demand. This tended to make a stronger market, despite the continued restricted eastern shipping demand, and advances occurred on several days. Naturally, the limited percentage of prime swine with weight led the upward movements, but medium grades also moved up, being taken frequently as substitutes, and even swine of ordinary grading sold higher. Grassy light mixed lots were discriminated against by buyers, however, and the opinion of the best judges is unanimously against marketing growing young hogs before maturity, as the great scarcity of stock hogs everywhere points unmistakably to high markets for many months yet. The average weight of last week's receipts was increased to 228 lbs., compared with 207 lbs. a year ago and 253 lbs. two years ago. Today, Monday, hogs sold at \$7.25@8.05, closing lower.

Sheep and lambs have been coming to market for still another week in liberal numbers, rangemen hurrying forward consignments, as bad weather will shortly cut them off. These flocks were much poorer in average quality than earlier in the season, as they consisted largely of thin ewes and sheep that were not considered as desirable for carrying thru the winter, and they sold low. Natives, too, were largely ordinary in quality, and many farmers will regret later on that they failed to make their holdings fat before selling. Ewes have been selling at \$2@4.40, wethers at \$4@4.60, bucks and stags at \$2.50@3.50 and yearlings at \$4.50@5.50. Lambs sold anywhere from \$3.75@6.90, with the best range lambs going at \$6.80 and feeder lambs bringing \$6@6.65. Breeding ewes were taken moderately at \$4@5.25, and feeders paid \$1.75@3.25 for ewes, \$3.75@4.25 for wethers and \$4.50@5 for yearlings. Sheep and lambs have declined sharply, but were active and firm today.

Horses were marketed freely last week, and while common ones were slow to find buyers, good animals had a satisfactory outlet at firm prices. As usual, the best sellers were heavy drafters around \$225@250 per head, while ice companies bot 1,400 to 1,500-lb. horses freely at \$150@200. Expressors sold briskly at \$165@200 and occasionally up to \$225, while wagon horses had a large sale at \$140@175. Loggers and feeders were active at \$170@225, and drivers sold on a basis of \$150@300, with not many going near the top figure.

LIVE STOCK NOTES.

The Chicago packers have firmly resisted all attempts upon the part of sellers to place hogs on a higher level, and whenever the best droves sell around \$8 per 100 lbs. they present a solid front in opposing advances. The highest price of the year, \$8.65, was paid in September, since which time sales have been generally below \$8, with the poorer kinds selling at a big discount, for weight is greatly wanted and brings a large premium. There is such an unusual scarcity of lard everywhere, abroad, as well as in this country, that the packers want far more heavy lard hogs than are coming on the market, and these are usually first to advance and the last to decline. Even heavy sows have recently sold very near the top of the market, greatly to the surprise of country shippers, who had seen them sell for some time about 25c per 100 lbs. below prime butcher hogs. Invariably the very worst sellers of all are the thin light-weight grassy hogs, which are bot by killers only under protest, for the packers are bitterly opposed to marketing of these immature hogs and are thereby seriously cutting into the future supply of matured swine. It is going to take a long time to bring the breeding of hogs for the market up to a normal standard, and the farmers will best consult their own interests by breeding as many sows as usual, for corn and hogs are famous money makers. There is a growing scarcity of provisions, and recently October pork sold in the Chicago market about \$10 per barrel higher than a week ago.

Prices for fat heavy hogs are greatly strengthened by the dearthness of lard and all other fats. Oleostearine has been selling at 20c a lb., the highest price in many years, while compound lard has recently advanced sharply. Cottonseed is high and will doubtless continue so during the year.

Good dairy cows have been selling extremely well lately. At the recent auction sale at Gilberts, Illinois, prices ruled very high for all good cows, and buyers came prepared to pay a good premium for cows that had a good record. Dairy farmers are no longer satisfied with ordinary milkers, having learned from actual experience that a good cow does not eat any more than a cheap one, while a scrub is dear at any cost. All good milkers and springers coming on the Chicago market for the past three months have met with an active demand, and many more prime ones than were offered could have been sold at high prices. Milk sells high, and butter is unusually high.

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.

October 28, 1909.
Thursday's Market.
Cattle.

Receipts, 1,167. Market steady at last week's close. Quality common. Stockers and feeders active.

We quote: Extra dry-fed steers and heifers, \$5@6; steers and heifers, 1,000 to 1,200, \$4.50@5; steers and heifers, 800 to 1,000, \$4@4.25; grass steers and heifers that are fat, 800 to 1,000, \$4@4.25; grass steers and heifers that are fat, 500 to 700, \$3.50@3.75; choice fat cows, \$3.75@4; good fat cows, \$3.50@3.75; common cows, \$2.50@2.75; canners, \$1.25@2; choice heavy bulls, \$3.75@4; fair to good bolognas, bulls, \$3.25@3.50; stock bulls, \$3; choice feeding steers, 800 to 1,000, \$4@4.25; fair feeding steers, 800 to 1,000, \$3.75@4; choice stockers, 500 to 700, \$3.50@3.75; fair stockers, 500 to 700, \$3.25@3.50; stock heifers, \$2.50@3; milkers, large, young, medium age, \$4@6; common milkers, \$2.50@3.50.

Bishop, B. & H. sold Bresnahan 2 stockers av 400 at \$3.17 do av 580 at \$3.35, 2 canners av 85 at \$2.1 bull weighing 1,360 at \$3.75; to Rattkowsky 4 butchers av 580 at \$3.25, 4 do av 585 at \$3.25, 2 do av 400 at \$3; to Hammond, S. & Co. 5 do av 592 at \$3.1 cow weighing 900 at \$3.7 do av 853 at \$2.30; to Mich. B. Co. 1 do weighing 880 at \$2.50, 2 do av 1,035 at \$3.3 butchers av 916 at \$3.25, 3 steers av 900 at \$4.50; to Bondine 11 stockers av 680 at \$3.25; to Stone 11 do av 545 at \$3.50; to Austin 4 heifers av 442 at \$3; to Richardson 2 stockers av 560 at \$3.40, 4 do av 590 at \$3.45; to Hupp 11 butchers av 633 at \$3.50, 4 do av 567 at \$3.25; to Sullivan P. Co. 2 cows av 55 at \$3.25, 6 do av 790 at \$2.35; to Stone 6 stockers av 500 at \$3.25; to Crippen 1 feeder weighing 830 at \$4.25, 23 do av 885 at \$4.25; to Schuman 3 butchers av 450 at \$3; to Greene 5 feeders av 746 at \$3.25, 16 do av 730 at \$3.75; to Hammond, S. & Co. 25 steers av 870 at \$4; to Richardson 8 stockers av 575 at \$3.50; to Eschrich 4 steers av 500 at \$3.15; to Erban 2 butchers av 500 at \$3.15, 2 do av 625 at \$3.

Spicer, M. & R. sold Mich. B. Co. 27 cows and heifers av 900 at \$4.30, 28 steers av 850 at \$4.15, 29 do av 894 at \$4.15; to Bresnahan 1 canner weighing 810 at \$2.25, 1 bull weighing 1,650 at \$4.4 canners av 712 at \$2.1 do weighing 630 at \$1.25, 7 stockers av 517 at \$3.25; to Rattkowsky 8 butchers av 646 at \$3.25, 2 cows av 1,085 at \$3.25; to Regan 6 butchers av 516 at \$3.25; to McDonald 2 bulls av 845 at \$3; to Hammond, S. & Co. 1 heifer weighing 1,000 at \$4.50, 2 steers av 1,025 at \$4.50; to Greene 4 stockers av 690 at \$3.50; to Schlischer 13 butchers av 718 at \$3.50, 4 cows av 837 at \$2.75; to Bresnahan 8 do av 1,062 at \$3.10 do av 907 at \$2.50; to Regan 13 heifers av 565 at \$3.30; to Richardson 3 stockers av 533 at \$3.25; to Hammond, S. & Co. 2 bulls av 1,250 at \$3.75, 2 do av 950 at \$3.75, 2 steers av 950 at \$4.50.

Roe Com. Co. sold Mich. B. Co. 10 butchers av 933 at \$3.25; to Bresnahan 8 stockers av 570 at \$3.35; to Breitenbach Bros. 15 heifers av 700 at \$3.50, 17 do av 786 at \$3.75; to Rattkowsky 1 cow weighing 1,000 at \$3.25, 2 do av 750 at \$3; to Kamman B. Co. 12 steers av 964 at \$4.85, 7 do av 800 at \$4.10; to Stone 14 stockers av 500 at \$3.40; to Bresnahan 8 cows av 856 at \$2.25; to Mich. B. Co. 2 cow and bull av 1,050 at \$3.50, 6 cows av 1,018 at \$3.50, 2 do av 885 at \$3; to Bush 28 stockers av 610 at \$3.60, 2 do av 580 at \$3.65, 3 do av 633 at \$3.65; to Regan 20 butchers av 549 at \$3.25, 2 do av 550 at \$3.10; to Newton B. Co. 4 do av 895 at \$4.3 do av 666 at \$3.40, 10 do av 686 at \$3.60; to Kamman 13 steers av 850 at \$4.25.

Haley sold Breitenbach Bros. 8 cows av 845 at \$2.30. Same sold Goose 8 cows av 831 at \$2.80. Johnson sold Lowenstein 31 stockers av 600 at \$3.80, 1 bull weighing 860 at \$3.40.

Haley sold Hammond, S. & Co. 7 butchers av 736 at \$4.1 bull weighing 980 at \$3.65, 1 heifer weighing 730 at \$3.75. Sandall & T. sold same 2 cows av 1,125 at \$3.75.

Bohn sold same 10 butchers av 863 at \$4.25, 6 do av 760 at \$3.75, 2 bulls av 1,075 at \$3.25, 10 cows av 990 at \$3.25. Haley sold Bresnahan 9 butchers av 566 at \$3.40, 2 cows av 895 at \$3.10, 2 do av 895 at \$2.65.

Same sold Robb 6 stockers av 583 at \$3.50. Haley sold Hupp 2 bulls av 625 at \$3.10. Same sold Fronn 5 heifers av 622 at \$3.50.

Same sold Sullivan P. Co. 6 butchers av 640 at \$3.50, 6 do av 583 at \$3.50, 1 steer weighing 930 at \$4.13 butchers av 761 at \$3.60, 5 do av 806 at \$3.75.

Johnson sold same 4 do av 780 at \$4.25, 2 steers av 1,145 at \$6.

Veal Calves.

Receipts, 433. Market steady at last week's opening. Best, \$7.50@8; others, \$4@7; milch cows and springers steady. Johnson sold Sullivan P. Co. 2 av 110 at \$7.25.

Kalahar sold Fitzpatrick 8 av 150 at \$7. Duell sold same 8 av 125 at \$7.50. Cheney & H. sold Breitenbach 1 weighing 150 at \$5.7 av 140 at \$7.50. Kendall sold Mich. B. Co. 2 av 135 at \$7.75, 21 av 145 at \$7.75.

Roe Com. Co. sold McGuire 6 av 155 at \$8.1 weighing 120 at \$7; to Goose 13 av 250 at \$3; to Sullivan P. Co. 1 weighing 140 at \$8.25.

Stephens sold Burnstine 14 av 180 at \$8. Haley sold same 2 av 210 at \$4.50, 1

weighing 150 at \$8, 2 av 155 at \$7.50. Adams sold same 5 av 125 at \$7.25. Hawley & S. sold same 3 av 150 at \$7.25. Spicer, M. & R. sold Breitenbach Bros. 7 av 155 at \$7.50; to Mich. B. Co. 3 av 125 at \$7.50; to Rattkowsky 1 weighing 210 at \$8; to Breitenbach Bros. 5 av 115 at \$7.25, 3 av 145 at \$7; to Goose 6 av 155 at \$5.

Tubbs & S. sold Rattkowsky 2 av 210 at \$6, 4 av 155 at \$7. Prucka sold same 6 av 150 at \$7.50. Wagner sold Newton B. Co. 2 av 135 at \$8.

Sheep and Lambs.

Receipts, 3,223. Market steady at last week's opening prices. Feeders in active demand.

Best lambs, \$6; fair to good lambs, \$5.50@6; light to common lambs, \$4.50@5.25; fair to good sheep, \$3.50@4; culls and common, \$2@3. Roe Com. Co. sold Mich. B. Co. 55 lambs av 70 at \$5.75, 33 sheep av 88 at \$3.25; to Sullivan P. Co. 29 do av 75 at \$3.10 lambs av 67 at \$5.50, 135 do av 83 at \$6.25; to Thompson Bros. 34 sheep av 90 at \$3.25, 21 do av 110 at \$3.50, 10 lambs av 69 at \$5.25; to Barlage 35 do av 65 at \$5.50.

Haley sold Mich. B. Co. 36 lambs av 63 at \$6.13 do av 55 at \$5.25, 65 do av 60 at \$5.25.

Wagner sold Newton B. Co. 14 lambs av 70 at \$5.50.

Haley sold same 2 do av 85 at \$6.8 sheep av 125 at \$4.

Spicer, M. & R. sold Stocker 29 lambs av 85 at \$4.75; to Noble 45 do av 65 at \$6; to Mich. B. Co. 12 sheep av 100 at \$3.25; to Sullivan P. Co. 9 lambs av 90 at \$6.40, 2 do av 95 at \$6.40; to Newton B. Co. 25 do av 85 at \$6.25; to Charlick & L. 57 feeders av 65 at \$5.75; to Fitzpatrick Bros. 49 sheep av 75 at \$4.75; to Mich. B. Co. 25 do av 110 at \$3.60; to Brown 42 lambs av 73 at \$6.15.

Bergin & W. sold Hammond, S. & Co. 6 sheep av 75 at \$2.13 do av 110 at \$3.50, 18 lambs av 75 at \$6.25.

Cheney & H. sold same 32 do av 82 at \$6.

Kalahar sold Fitzpatrick 8 sheep av 95 at \$3.15 do av 60 at \$4.68 lambs av 77 at \$6.

Duelle sold same 22 sheep av 90 at \$3.25. Johnson sold Young 12 sheep av 110 at \$3.37 lambs av 80 at \$5.75.

Adams sold Barlage 9 sheep av 105 at \$2.50, 24 lambs av 80 at \$6.10.

Hogs. Receipts, 4,675. Market steady at last week's prices.

Range of prices: Light to good butchers, \$7.50@7.65; pigs, \$7.15@7.25; light yorkers, \$7.35@7.50; stags, 1/2 off.

Spicer, M. & R. sold Parker, W. & Co. 63 av 190 at \$7.70, 52 av 185 at \$7.65, 115 av 170 at \$7.60, 94 av 165 at \$7.50, 29 av 150 at \$7.45.

Sundry shippers sold same 400 av 170 at \$7.60.

Spicer, M. & R. sold Sullivan P. Co. 75 av 155 at \$7.50.

Roe Com. Co. sold same 36 av 175 at \$7.65, 64 av 170 at \$7.60, 79 av 165 at \$7.50.

Bishop, B. & H. sold Hammond, S. & Co. 1,640 av 165 at \$7.60, 307 av 180 at \$7.65, 265 av 150 at \$7.50, 243 av 140 at \$7.40, 78 av 160 at \$7.45, 130 av 130 at \$7.30, 235 av 180 at \$7.55.

Mayer sold same 75 av 200 at \$7.75. Market closed about 5c higher than last week.

Friday's Market.

October 29, 1909.
Cattle.

There was a fair run of cattle at the Michigan Central Stock Yards Friday and the trade was active at Thursday's prices for all grades. Spicer & Reason topped the market by selling the Sullivan Packing Co. 18 good butcher steers, averaging 1,064 pounds, for \$4.65.

Milch cows and springers steady. Dry-fed steers and heifers, \$5@5.50; steers and heifers, 1,000 to 1,200, \$4.50@5; steers and heifers, 800 to 1,000, \$4@4.25; grass steers and heifers that are fat, 800 to 1,000, \$4@4.25; grass steers and heifers that are fat, 500 to 700, \$3.50@3.75; choice fat cows, \$3.75@4; good fat cows, \$3.50@3.65; common cows, \$2.50@2.75; canners, \$1.25@2; choice heavy bulls, \$3.75@4; fair to good bolognas, bulls, \$3.25@3.50; stock bulls, \$3; choice feeding steers, 800 to 1,000, \$4@4.25; fair feeding steers, 800 to 1,000, \$3.75@4; choice stockers, 500 to 700, \$3.50@3.75; fair stockers, 500 to 700, \$3.25@3.50; stock heifers, \$2.50@3; milkers, large, young, medium age, \$4@6; common milkers, \$2.50@3.50.

Bishop, B. & H. sold Erban 13 butchers av 800 at \$4.1 cow weighing 1,050 at \$3.60; to Richardson 2 stockers av 675 at \$3; to Erban 3 do av 480 at \$3.10; to Sullivan P. Co. 4 steers av 870 at \$4.6 butchers av 825 at \$3.50, 6 cows av 990 at \$2.75, 3 bulls av 723 at \$3.2 heifers av 700 at \$3.50, 3 steers av 903 at \$4.25, 3 cows av 1,000 at \$3; to Markowitz 2 cows av 1,150 at \$3.50, 5 butchers av 804 at \$3.85; to Goose 5 do av 684 at \$3.50; to Greene 4 feeders av 705 at \$4.

Spicer, M. & R. sold McDonald 6 stockers av 555 at \$3.20; to Richardson 2 feeders av 720 at \$3.75; to Hammond, S. & Co. 1 bull weighing 1,110 at \$3.75, 1 do weighing 1,060 at \$3.70; to Greene 2 bulls av 700 at \$3.10, 8 stockers av 537 at \$3.50, 4 do av 625 at \$3.50, 1 feeder weighing 730 at \$3.70; to Wilkie 3 stockers av 553 at \$3; to Greene 10 feeders av 768 at \$3.65; to Sullivan P. Co. 2 steers av 855 at \$4.7 butchers av 580 at \$3.35, 18 steers av 1,064 at \$4.65; to Jones 5 do av 986 at \$4; to Bresnahan 3 canners av 600 at \$2.25; to Hunt 3 cows av 790 at \$3.7 heifers av 480 at \$3.20.

McMullen sold Sullivan P. Co. 3 bulls av 1,076 at \$3.50, 2 canners av 885 at \$2.25. Haley sold Wilkie 5 cows and bulls av 800 at \$2.75.

Same sold Bresnahan 2 cows av 865 at \$2.

Same sold Erban 20 butchers av 608 at \$3.45.

Veal Calves.

The veal calf trade was 25@50c lower than on Thursday, the bulk of sales for best grades being at \$7.50. Garrett Casey, of Marshall, had five extra good ones that Bishop, B. & H. sold to the Sullivan Packing Co. for \$8.25.

Best grades, \$7@8.25; others, \$4@6.50.

Bishop, B. & H. sold Parker, W. & Co. 10 av 134 at \$6.50; to Hammond, S. & Co. 11 av 125 at \$7.4 av 155 at \$7.25, 9 av 140 at \$7.50, 2 av 110 at \$6.7 av 140 at \$7.50; to Greene 28 av 140 at \$6.75, 22 av 150 at \$7.50, 14 av 145 at \$7.25; to Powers 10 av 131 at \$7.25, 5 av 150 at \$4.17 av 140 at \$7; to Sullivan P. Co. 5 av 180 at \$8.25. Spicer, M. & R. sold Friedman 10 av 120 at \$6.65; to Hammond, S. & Co. 6 av 125 at \$6.50, 1 weighing 110 at \$5.1 weighing 170 at \$7.3 av 145 at \$7.50.

McMullen Com. Co. sold Mich. B. Co. 18 av 160 at \$7.75.

Lucke sold Parker, W. & Co. 5 av 130 at \$7.50.

Sheep and Lambs.

The sheep and lamb trade was fairly active, but at a decline of 25c a hundred from Thursday, nothing bringing over \$6.25. Prices:

Best lambs, \$6.25; fair to good lambs, \$5.50@5.75; light to common lambs, \$4.50@5.25; fair to good sheep, \$3.50@4; culls and common, \$2@3.

Bishop, B. & H. sold Greene 51 sheep av 85 at \$3.50, 30 do av 85 at \$4.14 do av 80 at \$3.25, 6 do av 75 at \$2; to Powers 10 do av 107 at \$3.5 lambs av 80 at \$6; to Johnson 221 feeding lambs av 65 at \$6.55 do av 73 at \$6.25; to Mich. B. Co. 30 sheep av 60 at \$3.75; to Pratt & R. 93 do av 110 at \$3; to Hammond, S. & Co. 32 lambs av 50 at \$4.50; to Sullivan P. Co. 31 sheep av 100 at \$2.50.

Spicer & R. sold Sullivan P. Co. 19 sheep av 95 at \$2.25; to Hammond, S. & Co. 9 lambs av 85 at \$6.25; to Mich. B. Co. 90 do av 60 at \$6.

Lucke sold Parker, W. & Co. 18 sheep av 95 at \$3.25, 51 lambs av 73 at \$6.

McMullen Com. Co. sold Hammond, S. & Co. 34 sheep av 90 at \$3.75.

Hogs.

The hog trade was active at Thursday's advance. Prices:

Light to good butchers, \$7.50@7.75; pigs, \$7.15@7.25; light yorkers, \$7.35@7.50; stags, 1/2 off.

Bishop, B. & H. sold Parker, W. & Co. 61 av 155 at \$7.65, 488 av 180 at \$7.70, 122 av 150 at \$7.60, 85 do av 145 at \$7.50.

Spicer & R. sold Sullivan P. Co. 97 av 185 at \$7.75, 10 av 220 at \$7.75, 90 av 150 at \$7.60.

McMullen Com. Co. sold Hammond, S. & Co. 178 av 155 at \$7.65.

VETERINARY.

(Continued from page 375).

good results as any remedy you can apply. An application every five or six days will be often enough. It is always good practice to give dram doses of iodide of potassium once or twice a day.

Lump-Jaw.—Three-year-old cow has a large bunch on upper jaw which started to grow last summer and it must have been quite painful, for she disliked to have us handle it. The bunch must be deep, for, besides discharging out over face, she discharges from nose on one side. The bunch seems to be growing and getting worse all the time and I have thought it should be treated at once. Cow does not appear sick. S. H. Cadillac, Mich.—Your cow is incurable. Besides she is undesirable to keep with other cattle for fear of infecting them. You have delayed treatment too long and it will not pay you to treat her now.

Stomach Worms.—I have two 2-year-old colts that I believe have stomach worms. One of them appears to be losing its mane; both seem to have good appetite. J. H. Hillsdale, Mich.—Give each colt a tablespoonful of turpentine in 8 ozs. sweet oil twice a week for two weeks. You should drench them with considerable care for fear of a portion of the drench going down windpipe and bringing on bronchial pneumonia.

Acute Indigestion.—Abdominal Abscess.—I have a mare that had a bad attack of acute indigestion last spring; the Vet. tapped her and she seemed to recover from the attack, but an abscess formed which has not yet healed. This mare is very thin. A. L. G., Ortonville, Mich.—In order to effect a cure in such a case it will be necessary to cut down to bottom of abscess and obtain as perfect a drainage to it as possible. This is work that a veterinarian should do; therefore I suggest that you call one to treat your mare. You should also give her a tonic, such as fluid extract gentian, 1 oz, fluid extract cinchona, 1/2 oz., tincture nux vomica, 1 dr., two or three times a day.

Apoplexy.—I would like to know what was wrong with my hog and the cause of death? Have five, weighing about 150 lbs. each, that have been fed all the corn they would eat; at noon one of them refused his feed and soon commenced to jerk all over; soon lost control of body, fell over and soon died. C. K. North Star, Mich.—A small blood vessel burst in brain, which caused death. Drugs cut no figure in the treatment of such an ailment. It is possible that if you feed less corn and give the hogs more exercise they will thrive better.

Stocking—Condition Powder.—I would like to know what to do far a mare that stocks in all four legs? She is in good flesh, eats plenty, but perspires easily. I would also like to know how to prepare a good home condition powder for my live stock that is not expensive. W. H. Montague, Mich.—Give your mare tablespoonful or two at a dose of the following compound powder which, by the way, is very useful and not an expensive stock tonic and conditioner. Of course, there are many other formulas that are better, but they are costly; therefore, in all my prescriptions thru this department I avoid prescribing very expensive drugs and serums, unless it is absolutely necessary. Powdered sulfate iron ground gentian, ground ginger, powdered cinchona, bicarbonate soda, and mixed thoroly. This you will not find expensive and a useful remedy for you to give unthrifty stock.

Rheumatism—Lumbago.—Please tell me what to do for a sow that was taken lame in one fore leg about a week ago. Now she is lame in all four quarters. It seems hard work for her to get up and after she walks a few moments is less stiff, but after a while gets stiff if allowed to stand. H. M., Salem, Mich.—You

have perhaps been feeding your sow too much corn and not enough oats and green food. Give her 1/2 lb. sulfate of magnesia or 4 ozs. castor oil to purge her—give this quantity daily until her bowels move three or four times a day. Apply equal parts turpentine, aqua ammonia and freely. Also give 15 grs. salicylate soda sweet oil to back and swollen joints once a day.

Fracture—Paralysis in Tail.—My two-year-old heifer met with an accident last July. Her back bone was injured and the point of injury is about six inches from end of tail. The snag penetrated the bone—I applied home healing remedies which appeared to act nicely. Ever since the wound healed this cow has had no use of her tail. Would you advise me to breed a cow of this kind, and if so would she not have trouble at calving time? L. D. C., Twining, Mich.—Your cow will never regain the use of her tail. There must have been a misplacement of the vertebra affecting the spinal cord, which always produces a complete paralysis. It will make no great difference about her calving only that it would be better to amputate her tail high up on account of cleanliness.

Barrenness.—I have a 14-year-old mare that proved to be a good brood mare up to two years ago, at which time she got loose and ate a large quantity of grain which appeared to sicken her and brot on a miscarriage of a foal three months old; since then she has failed to get with foal. What had I better do for her? J. B., Hastings, Mich.—It is doubtful whether your mare will ever breed again; however, if she has no vaginal discharge, and I presume she has none or you would have mentioned it, dissolve 3 ozs. baking soda in 3 qts. of tepid water and wash out vagina with this quantity once a day for ten days. This is best done thru a small rubber tube with funnel on end. Also give 30 drops of carbolic acid in a quart of water mixed with feed once a day for 20 days.

Garget.—My 7-year-old cow has been giving thick, lumpy milk from one teat and the quarter of udder is caked. What shall I do for her? W. H. N., Shelby, Mich.—Apply iodine ointment to caked udder once a day and give 1 dr. iodide of potassium at a dose in feed three times a day.

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HORTICULTURE

THE BOX PACKAGE—ITS USE AND LIMITATIONS.

If you are at all acquainted with the market for apples you know that the box as a package for carrying fruit to the consumer, is becoming more popular. But this does not argue that in every instance that boxes are substituted for the barrel that the grower trying it will succeed by the change. Success will be altogether dependent upon the conditions. The barrel is the product of the east and the box the product of the west. Those using fruit from the west are in the habit of getting that fruit in boxes, but on the other hand if the consumer uses eastern apples he no doubt will be in favor of the barrels, and there are cases known where the boxes have been unjustly discriminated against. The matter was well put by Prof. S. W. Fletcher, now of Virginia, but former head of the horticultural department of the Michigan Agricultural College. His address before the last meeting of the American Pomological Society is abbreviated in the following sentences:

The most distinctive thing, next to spraying, is fruit packages. A traveler from the Old Country notices how spraying had been developed and the use of different packages. Twenty-five years ago packages were made of rough boards, but today light and attractive packages are in use. In nothing have we made greater advance. There were three steps: First, the advent of gift package; second, the advent of smaller packages, and third, matter of uniformity, especially regarding apples and strawberries, the most cosmopolitans of all fruits. The apple barrel has been long the standard package, because it is easy to pack. It grew up in the east. The apple box is a western innovation where soft wood predominates. The box is easily handled and can get thru the customs. Boxes have always been used for apples, but not until the Pacific Western apples came east did the box come to the front. This was due to great distance the fruit must travel. A package takes up the least space and besides the pine, spruce and fir of the west were not adapted to make barrels. Only very substantial fruit was shipped. The transportation charges were heavy. It is not wise to copy methods of a region where cultural and transportation conditions are different. A bushel box of fruit may or may not be more convenient than a barrel of fruit. Apple barrels cost 25 to 40 cents each. Years ago 20 cents was the cost. Boxes vary from 6, 7 to 8 cents a bushel box. This is much cheaper than a barrel. Some pay 21 cents for a box. A barrel holds three bushels. Some pay 14 cents for a box, the cost depending on the locality. Eastern boxes are not as cheap as western, as eastern timber is not as plentiful as western. It also costs more to pack a bushel box of apples than a barrel. The unskilled man can pack a barrel of fruit, but not a box. In the east the future of box-packing depends on large growers and co-operative associations. In the west packing is done by gangs of men. In export trade a box gets across the water best. In barrels smaller sizes can be used, but not so in the boxes. Smaller apples do not pack well in boxes. You could not pack lop-sided apples in a box, only the best fruit is adapted to the box. Failures are due to the box being a new proposition. Barrels have been used for fifty, seventy-five or a hundred years. Buyers and growers do not favor the new packages. It depends on what the market wants to which the growers are shipping. Poor packing causes failures. A box package represents the ideal and the smaller package will become the more important. Hardwood is scarcer than soft wood, so the prices of barrels will increase. We will have paper and celluloid boxes. The whole question, however, is one as to local adaption.

ORCHARD SANITATION.

We may not have looked at certain orchard practices as the physician looks at the cleanliness of the home, but when reduced to its last analysis, our interference with the life history of the many pests that create trouble in the orchards, is nothing more than getting sanitary surroundings for the production of fruit. And the idea is one of growing importance. When fruit trees were isolated and

the pests of the land were still living upon the plants that nature apparently put before them to live upon and consume. It was unnecessary to give thought to the protection of the fruit trees against these pests. No more was it demanded than expensive sewers, fire departments, water systems, and other necessities in large centers of populations, are required in rural districts. These necessities of the great city are luxuries on the farm. To spray trees in the early days when the scab, codlin moth, and other enemies of the apple trees that we know today, were absent, would have been a luxury. But now our orchards are becoming more numerous and larger; they occupy more of the soil of our commonwealth; the host plants of large numbers of the pests have disappeared and that the pests might live they have migrated to the fruit trees; rapid transportation has brought to our shores large numbers of very destructive insects, fungous and bacterial diseases of Europe and Asia and other lands. These artificial conditions are different than the natural conditions of former days. Nature has not provided for the care of the trees under such environment. We must bear our liability for the interruption we have caused in the balance which nature had so carefully adjusted. In

cause must be largely placed at the door of the grower. He must intercept insects that harbor in piles of rubbish, by destroying such piles about his premises. He must hunt out borers that are working in the bodies of the trees, destroy the cocoons in the crevices of bark, fight scale insects and fungous diseases by proper spraying. His packing houses, storage places, tools, wagons, orchard implements of every kind are to be looked after that thru them trouble might not enter the orchard and diminish his results. The tree tops are to be kept clean of superfluous wood and the ground clean of diseased specimens of fruit that have fallen. Thus the orchardist is called upon to keep his premises and trees in a sanitary condition.

A GOOD PEACH TREE.

A combination of many things is necessary for the growing of an attractive tree. It is essential that the nursery stock be of high quality. Whatever other conditions may be provided it is impossible to make a good-looking tree from inferior stock. The tree must be planted under conditions favorable to its growth; this usually requires that the soil be well supplied with the elements of growth, that the water drainage be good and at the same time the tree be constantly allowed an inexhaustible supply for dry seasons since it is thru the moisture that is in the soil that the tree is able to use the food surrounding the roots; that the exposure to winds and the drainage of air and the sunshine must not be unfavorable. Combining these conditions with intelligent pruning and such spraying and other protection from enemies that might injure the tree or interfere with proper growth, one can then expect to get a good plant.

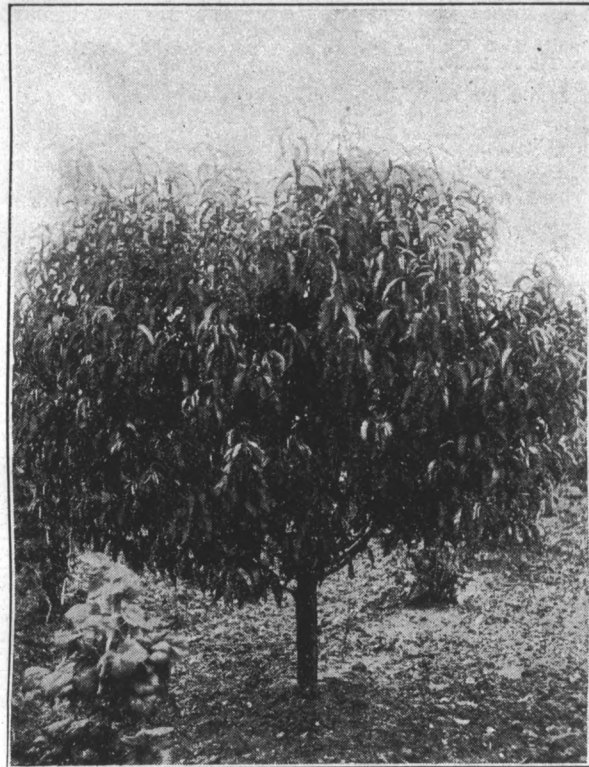
We are illustrating this week a well formed peach tree. It is three years old and is growing on the farm of S. B. Hartman, of Calhoun county. The top is low, compact and of good form. The first limbs are eighteen inches from the ground. This permits cultivation beneath and brings the top down where the workmen can prune, spray and harvest the crop with the minimum of labor. The form is such that the sunshine can get to the center of the tree in sufficient quantities that bearing surface might be continued with profit in that part of the tree. Besides, the tree trunk is protected from the direct rays of the sun by the shading top and in the winter time there is little surface of the trunk to be exposed to sun scald. Mr. Hartman has in this tree a good foundation for a fruit bearing plant.

CARE OF THE ORCHARD IN WINTER.

Every year during the early part of winter I remove from my orchard all dead and decaying limbs and trees, pile them outside the orchard and burn them. In this way a large number of injurious insects are destroyed and the orchard is given a better appearance. I then plant a young tree, of some good variety, in the center of the spot from which any old tree was taken, build up a mound of earth around it and carefully wrap the body with screen wire or other similar material, to keep the rabbits and mice from gnawing the bark during the winter. The mound of earth around the trees keeps the wind from blowing it back and forth and causing it to lean in one direction, which might otherwise be the case. The tree is also better protected from the cold.

As the orchard must have plant food I give it a good coat of well-rotted manure. This is not placed closer to the trees than two and one-half or three feet, as it might injure the trees if placed close up around the trunks. I apply the manure during the early winter and in the spring turn it under. I think the trees receive the greatest amount of fertilizing elements when the manure is thus used.

My orchard pays well and I put forth



A Three-year-old Peach Tree with Low Compact Head.

other words, we must constitute ourselves a board of health for our orchards.

The sphere of the bacteriologists and entomologists' duties is in determining vulnerable points in the life cycle of the pests that trouble us. In this they have done us a splendid service. These scientists are not slow to get to a new problem when it has been brought to their attention. They have knotty puzzles to unravel; but one by one they work out the peculiar history of these little beings, many so small that a microscope of high power is needed to get an idea of their shape, form and identity, and with patience, carefulness and rare ingenuity they have compiled their findings for our benefit. Then the help of the chemist is necessary to determine what will aid in intercepting the insect at those points where the biologist has discovered they are most likely to be intercepted. So he compounds his poisons, and repellants, and contact mixtures, and other materials. Next, the experimenter gets busy. He tries out what the chemist provides and watches for results. He may fail, when the case might be referred back to the scientists again; or, different methods of application of the material may occur to him, or a different time for doing the work, or a different form of getting it to the pests, or any combination of these with other advantages that might manifest themselves in the practical operation in the orchards. But finally he succeeds and the fact is published. In other places similar experiments are going on. Working independently other remedies are found. The discoveries are collected and compiled for the use of the man who keeps the orchard.

All this is done that we might keep our orchards clean of pests. There are few among these pests that cannot be controlled and they must be controlled today if we are to get fruit. The scientist has done his part. The knowledge is available. If results are not forthcoming the

A Sallow, Pimply or "Muddy" Complexion

Is Easily Gotten Rid of When Constitutional, Instead of Local Treatment Is Taken.

Every woman strives to acquire and preserve a clear, faultless, rose-and-lily complexion. This is apparently the height of the feminine ambition. No more fallacious epigram was ever penned than the one which says that "beauty is only skin deep;" and no greater mistake can possibly be made in endeavoring to gain a clear, pretty complexion, entirely free from pimples, blackheads and other skin blemishes, than the use of cosmetics, powders, lemon juice, cold cream, electric massage, and various other treatments, which aim at the complexion alone, and have no effect whatever on the blood, or on the general system.

Whenever you see a person with a clear flawless complexion, you may be assured that its perfection depends, not on the local application of the many fad treatments on the market, but exclusively upon a pure, wholesome condition of the blood, and upon its active, vigorous circulation through the skin.

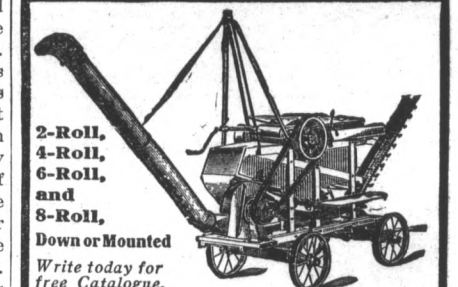
It is the blood which gives the skin its rosy color, and although electric massage, and other local treatments may draw the blood temporarily to the surface of the skin, it cannot keep it there. Only a strong circulation can do that. When the blood becomes impoverished and the circulation sluggish, the complexion, as a natural sequence, becomes sallow or "muddy," and pimples, blackheads, "liver spots," and other skin troubles put in their appearance.

One box of STUART'S CALCIUM WAFERS, which are taken internally, will do the complexion more good than all the cosmetics, beauty powders, cold creams, electric or manual massage, will do in a lifetime. These powerful little wafers cure because they strike at the root of trouble. They purify and renovate the blood so completely that the complexion cannot do otherwise than become clear, flawless and free from all skin blemishes.

Besides relieving the system of every particle of impurity, and thereby cutting off the source of the skin diseases, they also build up the blood, greatly increasing the number of red corpuscles in its current, and invigorating, strengthening and improving the circulation so decidedly that in a wonderfully brief period the cheeks become rosy, the complexion clear, the eyes bright, and the whole system glows with renewed life and vigor.

Secure a package of this blood-cleaning, complexion-clearing and system-renovating remedy from your druggist for 50 cents, and begin the treatment at once. Also send us your name and address and free sample package will be sent you. Address F. A. Stuart Co., 175 Stuart Bldg., Marshall, Mich.

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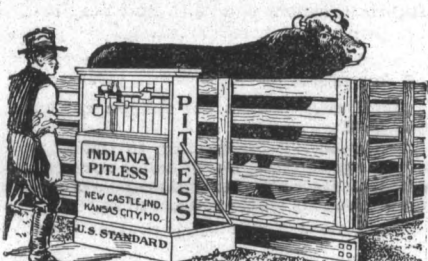
you not only get bigger yields and often more than one crop, but your income is not eaten up by long costly winters. Stock can graze all year and never needs costly shelter, for the winters are short and very mild. You get the highest prices for your products at near-by markets and your family has good schools and churches to go to. Is it any wonder that thousands of farmers are going down there to better themselves? Why don't you.



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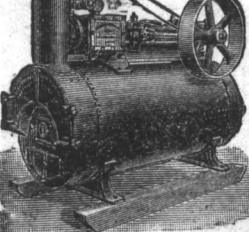
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every effort to keep it in a thrifty condition. There are a large number of orchards, especially small ones, that are seldom pruned, cultivated or given any care at all. Not long since I passed a farm and was greatly impressed with the lack of care and attention of a small orchard which was composed of not more than fifty trees. The orchard is at an age when it should be producing its best crops of fruit. It stood in a hard-packed sod ground, and large bushes, which almost reached the top of the trees, grew in abundance. Some of the trees had begun to die. Those large bushes had robbed them of practically all of the plant food. The orchard had not been pruned for years, as the trees were covered with large, useless water-sprouts. Had that orchard been given the proper care and attention it would, beyond almost any doubt, have produced enough fruit to supply the needs of the family. Illinois. W. H. UNDERWOOD.

KEEPING CELERY.

I have kept celery for winter use in a number of ways. The following have been the most satisfactory: One fall I dug a trench in my garden the desired length and width and about two feet deep. I put a box into the trench that fitted it very well. I then dug my celery out by the roots, leaving dirt attached to them. I set it into the trench, placing the bunches close against one another. Then some boards were laid over the top of the box and covered with straw, with dirt thrown over the straw. As the winter set in more dirt was applied and when the coldest days of winter came I threw over the mound a light covering of manure from the barn lot. The celery was perfectly white and tender in the late winter and early spring when gotten out for the table.

Another method was to dig the celery out and place it in boxes in the cellar. I filled in around the plants with dry sand. It kept very well.

Another method consisted in taking the celery out of the ground and banking it high with dirt. When cold weather came, I threw straw over it and later manure was put over the straw and boards laid over this to keep the contents dry and the temperature right. I like the first plan mentioned the best.

Missouri. W. D. NEALE.

ROTATING THE GARDEN.

Aside from the effect of the crops upon the soil the great benefit coming from the rotation of garden crops is to keep down insects. This cannot be done by changing the position of the different species in the garden for the amount of any kind of plant is so small in the average farmer's garden that the distance removed from where the plant grew the season before would accomplish nothing in fighting insects and fungous diseases. The garden itself must be rotated. This is the season to think about and arrange for this rotation. The best manner in which to do it is to have a number of plots about the barn where stock is allowed to run. These plots should be convenient to the barns so that feeding can be done in them thru the winter. One of these that has been given the run of the stock for the winter should be plowed up for garden the following spring, or better, it can be planted or sown to a forage crop and after that seeded down and then turned under for a garden. In this way the farmer will have these handy yards available, will be able to grow some soiling crop for feeding during the season when pastures are failing and at the same time have a rich garden that will be freer from pests than a plot continuously given to that purpose. It is useless to remind the farmer that good fences should be constructed about these plots. This work should be done now to make ready for the winter's feeding.

PROTECTING GRAPE VINES AND FRUIT TREES.

Should I cover my grape vines and fruit trees in any way this fall to keep them from winter-killing? They are young vines from nursery this spring. We have so much snow here in the winter the ground does not freeze at all.

Otsego Co. R. B.

There is no better protection against frost than a good covering of snow. It is the abundance of snow in your locality that prevents the soil from freezing. The heavy coverings along the west shore of Michigan have been favorable to fruit growing in the famous fruit belt. However, there is danger from the weather for the exposed parts of the tree above the snow line—danger from freezing the

buds and growing tissue and from combined freezing and mechanical bruises at the snow line should a crust form on the snow, where the sweep of the wind carrying small particles of ice and dirt against the body for some time may damage it. This latter danger is almost entirely overcome by tramping the snow about the trunks. This precaution is also a preventive against depredations by mice, as the mice will readily work beneath the loose snow, but do not venture when it is packed. It would not be a difficult matter to lay down the grape vines, throw over each a shovel or two of earth and allow them to remain in that condition till spring. The treatment will entirely eliminate danger from freezing, especially where snow is plentiful. The same practice is commonly employed with blackberries, raspberries, currants, etc., and peach trees are given the same treatment in many places where the tender nature of that tree is not sufficiently resistant to the severe weather. To lay down a peach tree the roots are severed a short distance from the trunk on two opposite sides and the tree is bent over in line with the sides where the roots are cut and covered the same as the grape vine above mentioned. Mulching the soil about the trees and vines with straw or litter of any kind would not do the plants any good so far as damage from cold is concerned, where the ground is well covered with snow. It would be of assistance in other sections where the earth is bare for all or any part of the winter.

LIFTING PLANTS FOR WINTER BLOOMING.

Plants which are intended for winter blooming should have had special treatment during the summer. They should have been encouraged to make a stocky, rather than a tender growth, to grow in full sunshine and allowed to become quite, but not dust dry between waterings. They should have been pinched back repeatedly to encourage the formation of side branches which means more blossom points, and above all they should not have been allowed to blossom; all buds should be pinched off as soon as formed up to the first of September, after which date they must be allowed to grow.

By the first of August they needed root pruning to bring them into reasonable size for potting. This is done by running a sharp knife down around the plant, cutting a circle somewhat smaller than the pot the plant is to occupy. This will induce the formation of new feeding roots and by the time the plant is to be lifted they will have made sufficient new growth to fill the pot. Two or three days before lifting again cut around them, this time the diameter of the inside of the pot. Water thoroly the night before lifting and lift by pressing a spade down below the root of the plant and lifting the ball of earth up bodily. It should be slipped from the spade to the pot without lifting in the hands if possible, as lifting it without disturbing the ball of earth is the secret of successful potting.

It is always best to lift plants before cold weather sets in or before they have been touched by frost. After the nights have become cold enough to make it necessary to protect plants with coverings of any kind they will not do so well when brought into the house. It is important that they should become established in the house while yet the atmosphere of the house approximates as closely as possible that out of doors. They will, then, become gradually accustomed to an indoor atmosphere and be less apt to suffer.

It will be well before bringing plants into the house to see that everything is in readiness—shelves and tables in position so that they will require as little handling as possible.

There is a great difference in the way in which various plants lift—geraniums are one of the hardest plants to lift successfully as the earth does not adhere to the roots owing to the small amount of fibrous matter, but the plan of cutting around the plant will materially assist in the formation of fine roots about the cut portion. Carnations are easily lifted and the same is true with plants of a tuberous nature.

There are many of the annual garden flowers which have come into bloom late that may be lifted and will make attractive winter bloomers. Verbenas and snap-dragons make attractive winter bloomers and the latter is especially desirable. The nicotiana affinis is one of the most successful of winter plants and grown in the house in an east or north window will hold its blossoms open all the day and its fragrance will perfume the entire house.

Branch Co. IDA D. BENNETT.

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No one but a woman can tell the story of the suffering, the despair, and the despondency endured by women who carry a daily burden of ill-health and pain because of disorders and derangements of the delicate and important organs that are distinctly feminine. The tortures so bravely endured completely upset the nerves if long continued.

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POULTRY AND BEES

FINISHING TURKEYS FOR THE HOLIDAY TRADE.

The time is at hand when attention must be given the turkeys which are to meet the keen demand created by the annual November holiday. What has been said in recent weeks about the wisdom of having market poultry in prime condition, if the seller expects top prices, applies to turkeys. While prices for these fowls at holiday time have ruled almost prohibitive the past few years, it seems certain that they will not be more favorable to the consumer this season. If the results of the systematic inquiries made by produce men in the big centers are to be relied upon the season's turkey crop is below an average one. Add to this the probability that the demand will be stronger than in either of the two preceding years, due to the more prosperous conditions at present prevailing, and good profit-yielding prices for all good stock seem assured. Note the qualification, "good stock," for the price range between good stock and poor stuff is sure to be wide. In times of high prices the consumer will frequently pay a pretty stiff price for a prime article that "looks the part," when he would turn down, in favor of some substitute, an inferior or unsatisfactory article at a relatively lower price. Then, too, it is harder to sell an inferior article at holiday time than at any other season. Growers should therefore be cautious about attempting to market many of the inferior kind, for there is no surer way of demoralizing a holiday turkey market. When consumers hesitate because of evident disparity between quality and price the market is sure to drag.

There is still time to prepare turkeys for Thanksgiving, as two or three weeks

roaming at will all summer, and it is therefore essential that they be handled as quietly as possible. Therefore, in preparing the pen, plan to supply their wants without disturbing them any more than is absolutely necessary. Avoid the necessity of frequent cleaning and the danger of disease by having the pen as open to the air as possible and by not crowding the fowls. Also endeavor to keep other animals away from the pen and to guard against disturbances of any kind which may excite or increase the natural uneasiness of the turkeys.

Do not feed too heavily at the start. Unless they have been getting a fair allowance of grain while on the range it will not be a difficult matter to do this, and the relish with which they accept the food offered them during the first few days must be closely observed. Give a variety, making up the morning meal from corn meal, bran, boiled potatoes, and cull apples or roots. In the evening give whole corn but not more than they will take with eagerness. After a few days, if the fowls' appetites remain keen, a change to three meals a day may be made. The morning and noon meals may consist of corn meal and cooked potatoes and the evening one of whole grain—corn, wheat or buckwheat. Some prefer to vary the morning meal by using wheat bran or barley meal occasionally, while others mix the meals and moisten with skim-milk. Steaming the whole grain fed at night is also practiced by some.

Of course, dry feeding is now in high favor for the reason that it reduces the danger from sour food which follows the leaving of even small particles of food in the troughs where wet feeding is practiced. However, the danger is not so great at this season, and some prefer moistening whatever ground grain is fed to fattening turkeys with skim-milk. There is no doubt that skim-milk, where available, can be fed to advantage, and for the benefit of those who practice dry feeding it is suggested that the skim-



Time for Alarm Among the Promising Candidates for Holiday-Market Honors.

of proper feeding will put the fowls in prime condition, provided they are well grown and in reasonably good flesh at this time. Those which do not measure up to these requirements had best be reserved for fattening for a later market. The flock should therefore be gone over carefully now with a view to selecting only such turkeys as seem reasonably sure of becoming choice fowls for killing by Thanksgiving time. In some cases these will comprise a good proportion of the flock, as where the fowls have had access to considerable grain on the range or have been given a small but regular allowance of grain in the orchard or woodlot for some weeks past. In fact, some flocks will receive no further preparation for market than this, but it will be better to separate the market candidates from the flock for the next few weeks.

In preparing to feed the fattening fowls it should be remembered that it is not practical to confine them as closely as chickens, owing to their greater activity. An old shed or other building open on one or two sides, preferably the south and east or the south and west sides, is easily converted into an excellent feeding pen for turkeys by simply covering the open sides with poultry netting. A sufficient number of broad perches, placed not more than three feet from the ground, an ample feeding trough, a drinking fountain and boxes for grit and charcoal, complete a feeding pen which should prove very satisfactory. Of course, these fowls will not take kindly to confinement after

milk be supplied as a drink rather than as a part of a wet grain mash. But whatever the ration, and regardless of whether it is fed wet or dry, the need of an abundance of grit, and of fresh pure water, must not be overlooked. A little pounded charcoal, given several times a week, is looked upon by many as a simple and effective safeguard against any bowel difficulty which otherwise might be induced by the forced feeding which should mark the latter part of the fattening period.

PRESERVATION AND VALUE OF HEN MANURE.

Hen manure and poultry manure in general are very rich in fertilizing constituents, especially nitrogen, due to the fact that, in addition to the undigested residue of the food it contains, the urinary secretions, in which are large amounts of nitrogen as well as potash in readily available form, are voided with the solid excrement in this class of animals. The analyses which have been made show that hen manure is very variable in composition, depending upon the stage of growth of the fowl, the character of the feed, and the care taken of the manure. The nitrogen has been found to vary from about 0.7 to 2 per cent, the phosphoric acid from 0.5 to 2 per cent, and the potash from 0.25 to 0.9 per cent. This shows that such manure if properly cared for, is much richer than that of other farm animals. It, however, quickly

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Stop That Rat Tax

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Rat Mum is a sure poison, combined with embalming chemicals that dry up dead rats without smell.

It comes in cakes, ready for use, without mixing and without anything to do but just break it up and put it where rats run.

Cats, dogs and stock will not touch Rat Mum, but it is candy for rats and positively kills them, or money refunded.

At this time of year the rats are gathering in your cribs, barns and houses for the winter.

They eat everything valuable and destroy more than they eat.

Rats carry hog cholera from one farm to another.

Rats live in and create disease, disorder and waste.

Give them Rat Mum and destroy them relentlessly.

Rats live in colonies and have foragers or scouts. You get these old fellows the first night with Rat Mum and get the rest of the colony the second, third and fourth nights. Kill them all.

A dollar's worth of Rat Mum will do the business for an ordinary barn.

Warehouses, stores and large barns need at least two dollars' worth. Use plenty.

It is cheap riddance for so great a pest as rats.

The Department of Agriculture

says "It is not creditable to our civilization that a creature so hideously obnoxious as the rat should be allowed to flourish."

We will send you seven 15 cent cakes of Rat Mum for a dollar, or fifteen cakes for two dollars. Forty cakes for five dollars. We prepay all express and packing charges and guarantee Rat Mum to do the work.

Your money will be refunded if you are not satisfied.

When sending us your order, if you will give us the name of the grocer, druggist or other storekeeper where you trade, we will include in our shipment to you, our booklet entitled, "Rats and Their Habits," which you will find very interesting and instructive.

Send one dollar for seven cakes of Rat Mum, or

Send two dollars for fifteen cakes of Rat Mum, or

Order more in proportion to the size of your premises. Forty cakes for five dollars. Order plenty and make a clean up of the rats while you are at it.

Send now and stop that Rat Tax waste.

Send cash or money order at our risk.

Give us both your Post office and nearest Express office addresses.

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This great food value and low cost make it an ideal food for families who want to get the greatest good from what they eat.

Laborers, factory or farm hands, fed plentifully on Quaker Oats will work better and with less fatigue than if fed on almost any other kind of food. All of these facts were proved and very interesting information about human foods were gathered by Professor Fisher of Yale University in 1908. In addition to the regular package Quaker Oats is packed in large sized family packages either with or without china dishes.

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The greatest remedy yet discovered for all diseases of the horse's hoof.

\$100 for any diseased condition of the hoof that it will not improve or cure. **\$100**



No stable equipment is complete without a can of

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It will thus keep the Foot, Frog and Sole Flexible. Its action is sure in quarter and center cracks, brittle and seamy hoofs, split hoofs, separation of wall and sole, hard and dry frog, corns, foot soreness and feverish feet all yield readily to its softening properties.

Will relieve and soften hoofs of track and road horses in 24 hours.

This great remedy is the result of thirty years' study of foot diseases by the discoverer.

It is a Sovereign Remedy

For collar boils, chafe, gall sores, barbed wire cuts, fresh or chronic sores of any kind on man or beast.

Satisfaction guaranteed if used according to directions, or your money will be refunded.

Sold and guaranteed by all Drug Stores, Harness Stores and Country Stores. If your dealer doesn't handle our goods write direct to our office.

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Ask your horseshoer if he has ever used
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For Maple, Sorghum, Cider and Fruit Jellies.

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300 YOUNG MEN

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THE STANDARD TELEGRAPH ACADEMY,
BOX A75, Lima, Ohio.

loses nitrogen by fermentation and deteriorates in value if not properly mixed with absorbents or preservatives. Various methods of preventing this loss have been proposed.

The New York station advises: "When the manure is not used when fresh, it is better to mix it with earth, muck or plaster."

The Massachusetts station says: "The value of hen manure depends not less on the care which is bestowed on its keeping than on the kind of food the fowls consume. A liberal use of plaster kieserite or of good loam is highly recommendable for the absorption of ammonia. A sandy soil is of little use as an absorbent."

The Maine station reports comparative tests of kainit, plaster (gypsum), and acid phosphate singly and combined with sawdust as preservatives for hen manure. Three nights' droppings of 180 mature, laying hens, amounting to about 40 lbs. and containing when fresh 2.8 per cent of nitrogen, 1.8 per cent of phosphoric acid, and 0.9 per cent of potash, were mixed with various preservative materials and stored in barrels from May to November. An examination at the end of that time showed that from the dung stored by itself or with sawdust more than half of these fertilizer ingredients had escaped during the summer. The lot stored with 40 lbs. of plaster lost about one-third, while the lot stored with 82 lbs. of plaster and 15 lbs. of sawdust suffered no loss.

BEE HINTS AND OBSERVATIONS.

The wonderful industrious insects called honey bees, or hive bees, which since last spring have worked so faithfully, and in fair weather with seeming haste, to store their hives with honey, have finished their labors to enjoy their winter's rest, and feed on their hard-earned food. If their pasturage of flowers was abundant, and not too distant from their homes, they filled their hives with delicious nectar, and no doubt have been able to spare a considerable amount and still have enough left to carry them thru comfortably until spring flowers bloom again. Many hives have been examined in the spring which had nearly half their honey remaining.

It has always been known that a strong colony of bees under favorable circumstances would lay up more honey than needed for its support thru the winter, and how to remove this surplus without removing too much has been a difficult problem for bee keepers to solve. Some remove the greater proportion of the honey early in the fall and depend upon feeding the bees glucose, sugar, molasses, or something cheaper than honey. It may be that experienced bee keepers can do this successfully, but beginners had better not attempt it.

In passing apiaries in the spring I have noticed patent hives on their stands which no bees were to be seen entering or leaving. They were all dead and probably had been starved to death, or been poisoned by unwholesome food. At such times I am not quite sure that the new way is better than the old. It would seem to be less cruel to smother them to death with brimstone fumes at once, than to subject them to the tortures of starvation, or forcing them to eat unwholesome food and thus bring on disease and a lingering death.

Supplying the hives with little receptacles in which to build their combs and store their honey was a great improvement over the old way. These receptacles or bottomless boxes, are easily removed from the hive, bringing an unbroken comb of honey in the most convenient form for the merchant to sell and the customer to buy. It may be that making artificial combs out of wax for the bees to fill is another valuable discovery. It certainly saves the bees a great deal of time which they can thereby devote to gathering and storing honey.

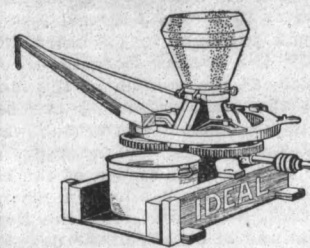
Bees need salt as much as do cattle, and should have it placed where they can readily supply themselves when they see fit, and where the rains will not wash it away. I think some bee keepers underestimate its importance, or neglect to provide it, for I have frequently seen bees in large numbers getting salt from a cess-pool. It is known that from some cause bees occasionally make honey which, tho wholesome to themselves, is poisonous to human beings. Zenophon, the Greek general and historian, found his soldiers seriously injured by eating honey produced from deleterious plants. Honey made from a particular flower in the island of Jersey was found unfit for human food, having in it the intoxicating principle of opium.

Pennsylvania.

J. W. INGHAM.

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Keep It Off The Cows Put It On The Fields

No matter how hard you try you can't make an old stable with dirt floors and wood partitions sanitary—you can't keep it clean and sweet. Wood partitions gather dust and disease germs. Dirt floors with their tramped-in filth should never come within a stone's throw of your milk pail. When a cow gets off her feed and her milk yield falls below normal, look to your stable. It may be as clean as you can make it, but that may not be clean enough. Equip your stables

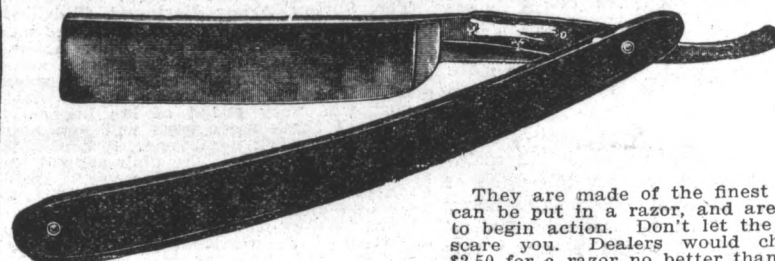
The Louden Way

then profits will not fall off. The cow that is best treated gives the most milk—the best milk—the richest milk. She has a heap of cow sense. She appreciates light and air, and she will see that you get your money back for making her home modern. If you will put a **Louden Litter Carrier** to work behind her, your boys or your man will clean the barns in less time and with less labor. We have been fitting up barns for 50 years. We will be glad to give you the benefit of this experience by suggesting what you need for yours, without any expense to you. Send for catalog, tell number of cows you have and submit rough sketch of stable.

LOUDEN MACHINERY COMPANY, 603 Broadway, Fairfield, Iowa.



ONCE OVER WITH THIS WILL DO.



They are made of the finest steel that can be put in a razor, and are all ready to begin action. Don't let the low price scare you. Dealers would charge you \$2.50 for a razor no better than what we ask 75 cents for. Each razor fully guaranteed. There can be nothing better in a razor, regardless of price. Order at once, 75 cents, postage paid. 8 cents extra if registered. You will not have to saw your beard off. Once over will make your face smooth as a baby's. We use one and know whereof we speak. With The Farmer a year \$1.25; 2 years, \$1.65; 3 years, \$2.00.

Shaved With It Three Years.

Three years ago when I first signed for the Michigan Farmer, I also ordered one of your German razors. I have shaved with it ever since, and I find that it is the best razor I have ever used, and anyone needing a good razor will make no mistake in trying one of your razors.—H. D. Inglis.

THE MICHIGAN FARMER, Detroit, Mich.

7% GUARANTEED

And you participate in all dividends of a sound, established corporation having a successful record, and over \$500,000 assets.

The stock offered is as safe as a savings bank—back of it is half a million dollars of assets—not mere property, but thriving, growing property—and back of this, to keep it thriving and keep it growing in value, is a trade-name and a trade-reputation, that even though they stood alone unsupported by tangible property, would be worth thousands and thousands of dollars.

But, linked together—a great trade-mark on a great product, with substantial manufacturing property and safe, shrewd management—a steady, wide-spread consumer-demand, and a settled trade with jobbers and retailers across the country—a modern, growing business in every sense of the word, this is an investment that will make a corner-stone for your operation.

At present time it pays 2% dividend quarterly. The terms of issue of the Preferred Stock guarantee 7%; and, with the other enlargements now ripe for us to make, we can increase this rate.

The plans we contemplate, and for which we desire additional capital are not speculative—are not an invasion of untended fields. They are plans to squeeze tighter the fields and better the trade already in our grasp.

Every detail that you may desire to know will be gladly supplied. Every facility will be extended to make a close, careful investigation. Address **OPPORTUNITY**

Care Long Critchfield Co., Chicago, Ill.

SINGLE COMB WHITE LEGHORNS.

Cockerels \$1.50 for one, \$3 for three. Snowflake Poultry Farm, R. F. D. No. 1, Grand Rapids, Mich.

BUFF Orpingtons for sale.—Cockerels, pullets and hens, good stock, must be sold at once. Mrs. E. M. Gray, Augusta, Mich. Bell Phone Galesburg Ex.

FOR OCTOBER will sell yearling hens in White, Silver, Golden Wyandottes, S. C. and R. C. White and Brown Leghorns, Light Brahmas, Barred Rocks, at \$1 each in lots of 10 or more. Nothing cheap but price. E. J. HASKINS, Pittsburg, Mich.

MRS. FLORENCE HOWARD, Petersburg, Mich. White Rocks and Rose Comb White Leghorns. Stock for sale, \$1 up. Bargains. Write.

WHITE AND **BUFF** ORPINGTONS from my prize-winning strain at living prices. Can also furnish B. Rocks, Blk and R. C. White Minorcas, W. C. B. Polish, Houdans and White Leghorns. **H. H. KING, White, Michigan.**

SILVER Laced Golden and White Wyandottes. A fine lot of young stock all bred from prize winners. **C. W. BROWNING, Portland, Mich.**

BARGAINS in S. C. Brown Leghorns, 100 yearling hens \$1 each, best stock in Mich. First comes gets the pick. Order from this ad. Satisfaction. **FRED MOTT, Lansing, Michigan.**

White Wyandottes, been breeding them continuously since 1895. **A. Franklin Smith, R. F. D. No. 9, Ann Arbor, Mich.**

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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. B. HUDSPETH, Sibley, Jackson Co., Mo.**

TRAINED FOX HOUNDS and **Hound Pups** for hunting fox and coon. Also Collies & Ferrets. Inclose 2c stamp. **W. E. Lecky, Holmesville, Ohio.**

FERRETS.

5,000 Ferrets Always buy Michigan ferrets, they are stronger and better climated. Price list and cir. free. **DeKleins Bros, Box 41, Jamestown, Mich.**

4,000 LIGHT AND DARK FERRETS Catalog free. **C. J. DITICK, Rochester, Ohio.**

FERRETS—Warranted good rat and rabbit hunters. A few choice Fox Terrier Pups. Circular and price list free. Address **SHADY LAWN FERRET FARM, New London, O.**

4,000 FERRETS—They hustle rats and rabbits. Prices and book mailed free. **J. N. A. KNAPP, Rochester, Ohio.**

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FARMERS' CLUBS

OFFICERS OF THE STATE ASSOCIATION OF FARMERS CLUBS.

President—A. L. Chandler, Owosso.
Vice-President—Mrs. Clara L. French, Pompett.

Secretary—Mrs. W. L. Cheney, Mason.
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Directors—D. M. Beckwith, Howell; D. M. Garner, Davisburg; T. B. Halladay, Norvell; E. C. Hallock, Almont; B. A. Holden, Wixom; Wm. H. Marks, Fair Haven.

Address all correspondence relative to the organization of new Clubs to Mrs. W. L. Cheney, Mason, Mich.

Associational Motto.

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

Associational Sentiment.—

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

A PLEA FROM PRES. CHANDLER.

Never since the farmers' club movement started in the state of Michigan has there been so much interest and practical work as there is at the present time. From over the state I am receiving encouraging reports from those who are going to take part in the Annual State Meeting at Lansing, December 7-8. Not only have those who have agreed to take part a good reputation at home as practical people, but they have shown in the club and elsewhere that they can deliver interesting addresses.

James Hamilton, of Washington, D. C., who is coming to address us, is superintendent of institute work for the United States and it is a compliment to our club and club workers that we are going to have him with us, which will be educational as well as an inspiration to our own workers. I would suggest that in selecting delegates that the clubs who send delegates would pay at least their carfare, if not their entire expenses, during the session and also send their very strongest and most energetic club workers in order that the president, as soon as such members arrive, can make his committees and not have one moment going to waste during the two days of our meeting. You may be assured that among the advanced farmers of the state at the present time there is certainly some thinking going on as well as some doing. Most of us believe that the price of beans is kept down by the bean dealers' association; we also believe that the price of hay is kept at least two dollars below what it should be by the hay dealers' association, and I might continue this subject still farther but each farmer who is following the markets is fully convinced that we must take some action at the present state meeting to protect ourselves, and the strongest men and women should be sent to talk these matters over.

Many of our public men, including the governor of the state, several of our congressmen, some of the state senators and state officials have been lending a hand to make this meeting interesting and influential and it will be a great disappointment to the state officers and executive committee if the Clubs do not send plenty of delegates, live resolutions and helpful suggestions to the state meeting. This meeting will be free from politicians and free from agents and fads and I believe that no one who attends will go away disappointed.

A. L. CHANDLER,

President State Assn.

WHAT THE LOCAL CLUBS ARE DOING.

Under this head, subsequent to the last annual meeting, we published a synopsis of the reports from local clubs given by the delegates at the annual meeting during the conference of local club workers. As the reader will remember, the facts brot out by those delegates showed a variety of methods to be used by the local clubs of the state in the conduct of their business affairs and the meetings which they hold. In the matter of getting out their programs, for instance, there are many methods used and many opinions expressed as to the best policy for the club to follow. Many of the clubs use yearly programs, containing all the way from a mere outline of the meeting for each month to the complete detail for each meeting, etc.

Now, this information is all most interesting, but the clubs doubtless fail to draw the full lesson from it which might be obtained. If the printed program is

found to be much superior to the month-to-month kind in one club, it naturally follows that it would be a good thing for other clubs, making due allowance for the difference in local conditions. We believed that it would be profitable if the delegates to the next annual meeting would come prepared to discuss a little more fully the special features of club work which, in the opinion of the members, are the best, or among the best, features in the conduct of the club which they represent. If yearly programs are used, the previous experience of the club which led up to their adoption may be touched upon with profit, and the lesson made plain and of benefit to the delegates present from other clubs. If the club fair has been found to be a profitable special feature in the club it will be helpful to know in just what way, and what plan was followed to make it so. If the club institute has proven a valuable means of maintaining the interest in the club the delegate should be prepared to state in a few words the beneficial results which have been noted. If the club has followed some plan whereby the young people have been successfully interested in its work that feature should be enlarged upon. In fact, there are dozens of things which would occur to the club members at the monthly meeting which would not occur to the writer and which might not occur to the delegate when at the annual meeting, but which would be in the line of valuable information to the other delegates who will attend the conference of local club workers, which is an important and interesting feature of the associational sessions. If these matters could be discussed by every local club in the state at some meeting between the present time and the time for the annual meeting in December, this conference of local club workers might be made of still greater value as a feature of the annual meeting. Try it at the next meeting and see if something definite cannot be decided on which the delegate from each club may justly emphasize at this session as worthy of emulation by the other clubs represented at the annual meeting.

FARMERS' CLUB FAIRS.

Spring Arbor Club.

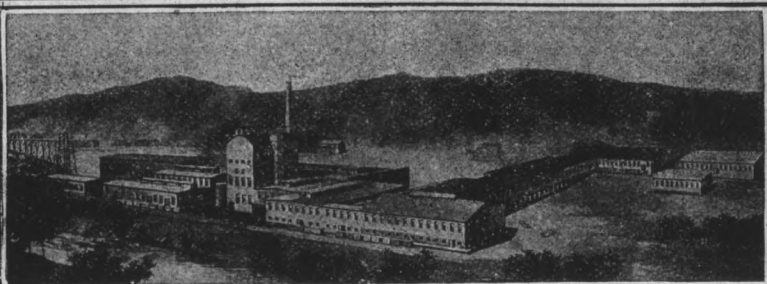
The Spring Arbor Farmers' Club, of Jackson Co., held its club meeting and fair at the town hall in Spring Arbor, Oct. 2. The meeting and fair was a success in every way. The exhibits were good. The boy mentioned in our last report was very proud of his big sunflower. I think more boys will join him in the good work next year. A bountiful dinner was served. The club opened by singing, "Bringing in the Sheaves." Hon. Charles Townsend came to dinner. He gave the club a very interesting talk in regard to the pleasant life of the farmer, also a good description of the Capitol at Washington. The people enjoyed Mr. Townsend's talk very much. The senior class of the S. A. Seminary favored us with some vocal music, also a fine recitation. Everyone seemed to enjoy our fair and meeting, and that we would have a fair again next year.—Mrs. A. Carter, Reporter.

CLUB DISCUSSIONS.

Finances and the Farmer's Wife.—At the October meeting of the Southeast Vernon Club, of Shiawassee Co., Mrs. Wm. Onyon presented some good thots in handling the question, "The financial difficulties for the farmer's wife." She did not think these difficulties were any harder for a farmer's wife than any other, and as a comparison referred to the railroad man's wife, the majority of whom carry monthly accounts for trade and are always having a difficulty in keeping even or in watching the size of these accounts each month. As a suggestion Mrs. Onyon said the farmer's wife should learn the difference between wants and needs, abide by the latter, and then there would be little in the difficulty line. She believes in a general purse in any family, having the idea that the prudent housewife will do much better when she knows all of the financial situations in her home.

Manual Training and Agriculture.—The Odessa Farmers' Club met at the home of Mrs. Fellows Saturday, Oct. 9, 1909. The meeting was called to order by President Curtis. After the usual opening exercises Miss Ruby Carter opened the discussion of the subject, "Agricultural and Manual Training in the Public Schools." "Something would have to be left out of the present curriculum and what would it be?" "The average student is a lively one." Manual training might do to use up surplus energy, but agricultural training in city and village schools would mean a plot must be plowed and dragged and who would do it? Again, the plot would have to be left at a time when the garden was just started." Mrs. Augst would give the boys something to do; keep them off the streets. This subject was pretty well brot out, with many thots for and against it. After this and other discussions came miscellaneous business; property exchange, question box. The club members sang "America," and the meeting was adjourned to meet with Mr. and Mrs. LaFayette Lepard, in November. There is to be the annual election of officers and the president wishes the members to be on time, the meeting to be called at 10 o'clock.

Amatite ROOFING



PLANT OF THE CHERRY RIVER PAPER CO., RICHWOOD, W. VA.

Every Farmer Should Read This Letter!

IN 1904 the Cherry River Paper Company bought five carloads of Amatite Roofing, to be used as they thought for temporary purposes. The satisfaction it gave was so surprising that they ordered three more carloads, and after four years of service, they are so satisfied that all their new buildings are being covered with Amatite.

Read their letter herewith.

Four years ago we purchased about five cars of this Amatite Roofing.

Our idea of buying this Roofing at the time was to have our buildings covered immediately as they were completed and after the entire plant was finished to decide on the kind of a roof we would put on for permanent use.

When we were ready to take the matter up, the Amatite was in such good shape that we decided to give it a chance. It now has had four years' use and is practically in the same condition as when we first applied it. Since, we have purchased One Thousand rolls or more, which amounts to about three carloads.

Very truly yours,

CHERRY RIVER PAPER CO.

This is not an exceptional case. Amatite is far more substantial and serviceable than ordinary "ready roofings."

It has a real mineral surface and needs no painting to keep it tight. Thousands of owners of Amatite roofs have been delighted to find that after years of wear Amatite does not show the slightest sign of deterioration—and remember—it gives the service without painting or coating of any kind.

All the so called "rubber" or "gum" ready roofings require constant painting to keep them tight. It is the paint that protects, and not the roofing.

Free Sample

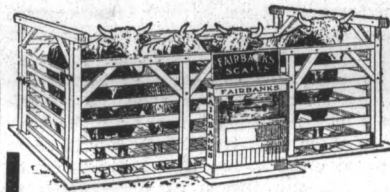
We would like to send every reader of this paper a sample of Amatite. It is our best advertisement. It shows what a durable and satisfactory roofing Amatite is, and why it needs no painting. Address our nearest office.

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is taking chances with large odds against you. Underestimating the weight of each head by only a few pounds would mean a very large loss within a short time. Can you afford it? Why not be absolutely sure you get full value for your stock by weighing it on your own Fairbanks Scales. The reliability of these scales has been established by over

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Or address the nearest one of our 27 Branch Houses

GALLOWAY SAVES YOU \$50 to \$300

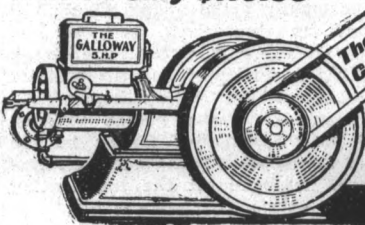
SAVE from \$50 to \$300 by buying your gasoline engine of 2 to 22-horse-power from a real engine factory. Save dealer, jobber and catalogue house profit. No such offer as I make on the class of engine I sell has ever been made before in all Gasoline Engine history. Here is the secret and reason: I turn them out all alike by the thousands in my enormous modern factory, equipped with automatic machinery. I sell them direct to you for less money than some factories can make them at actual shop cost.

All you pay me for is actual raw material, labor and one small profit (and I buy my material in enormous quantities).

Anybody can afford and might just as well have a high grade engine when he can get in on a wholesale deal of this kind. I'm doing something that never was done before. Think of it! A price to you that is lower than dealers and jobbers can buy similar engines for, in carload lots, for spot cash.

An engine that is made so good in the factory that I will send it out anywhere in the U. S. without an expert to any inexperienced users, on 30 days' free trial, to test against any engine made of similar horse-power that sells for twice as much, and let him be the judge. Sell your poorest horse and buy a

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Get Galloway's Biggest and Best FREE GASOLINE ENGINE BOOK

Write today for my beautiful new 50-page Engine Book in four colors, nothing like it ever printed before, full of valuable information, showing how I make them and how you can make more money with a gasoline engine on the farm. Write me—

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645 Galloway Station, Waterloo, Iowa

GRANGE

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

THE NOVEMBER PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Men's hearts ought not to be set against one another but to be set with one another.—Thos. Carlyle.

Instrumental music and recitation.
Co-Operative features of the Grange:—1, trade contracts; 2, fire and cyclone insurance; 3, marketing farm produce; 4, social co-operation.

The fight against Tuberculosis:—1, anti-tuberculosis laws in Michigan; 2, what organizations are doing; 3, what can individuals do?

Music and dialogue in charge of two young men.

Suggestions for Second Meeting.

Now is the time for Thanksgiving, for music and greetings and mirth.—Margaret Sangster.

Song, page 193, in "Grange Melodies." Roll call of officers, responded to by Thanksgiving sentiment.

Cookery—II. Fuel-foods and tissue-building foods.

Recitation (relative to Thanksgiving). Fruit Growing—II. Tillage and Fertilization.

Harvest march, or drill, in costume—members carrying grain and sickles, and all singing "Bringing in the Sheaves," in charge of Ceres.

Closing song, page 6, in "Grange Melodies."

WORK STILL TO BE DONE IN OLD FIELDS.

In one of our meetings for country and town women, a discerning woman clinched a mooted question by remarking, "The main difference between farm and city people is a few miles."

I have been struck anew with the fact of how largely and sometimes pitifully this factor of a "few miles" has always entered into farm life by the re-reading of the daily journal which my father kept thirty-nine years ago. It was a mile to

perhaps in the winter we might get over." Ah, I remember an eleven-mile ride over corduroy roads taken once in that locality, and do not question the wisdom of the writer's conclusions!

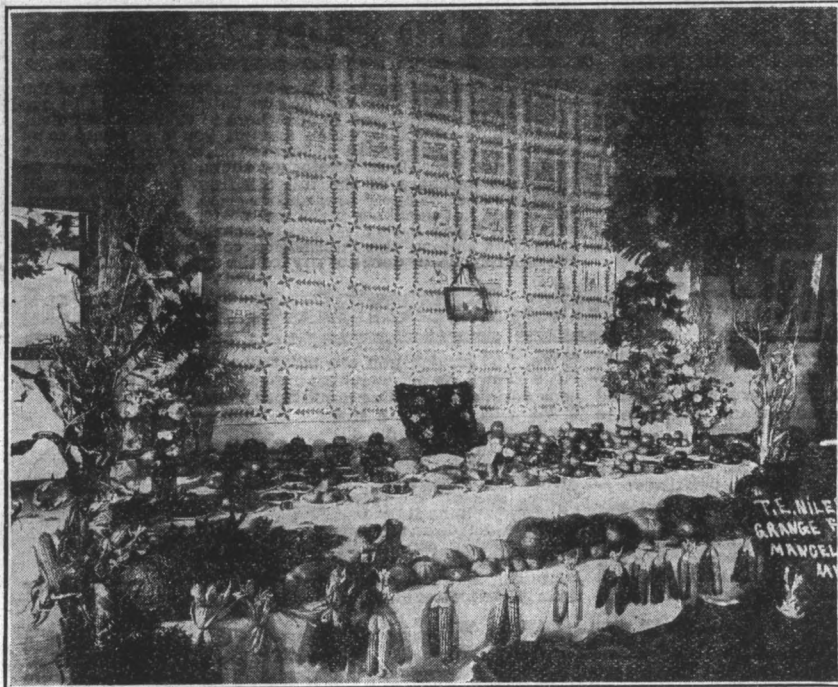
To get rid of the tyranny of distances may be set down as the primary physical need of rural life. Its yoke-fellow, on the social plane, is lack of leadership. Discussing these conditions a prominent Grange worker recently said, "There are many life tragedies that are full of pathos in some of the homes of our own state—many men and women who never had a chance, and something must be done for them or their children will never have a chance either."

These are among the reasons why we find the Grange has been and is still interested to secure those institutions which tend to eliminate distance and isolation, such as better roads, extending rural telephone and trolley lines, rural mail delivery, parcels post and postal savings banks. To many people these topics are seemingly worn threadbare, but we should remember that none of them have reached their limits of possible extension and some have not been begun. So long as all do not have as good physical conditions as are possible, all things considered, the Grange still has a field to till.

JENNIE BUELL.

MANCERONA GRANGE FAIR.

At the fair held by Mancelona Grange, of Antrim Co., on Sept. 25, State Steward Niles and wife made an extraordinary exhibit, a photographic reproduction of which is presented upon this page. The exhibit contained the following articles: Thirty-seven varieties of apples, 4 tomatoes, 2 eggs, 4 beans, 2 onion sets, 2 potatoes, 4 samples of dent corn, 3 of sweet corn, 6 watermelons, 3 muskmelons, rye, wheat, buckwheat, oats, beechnuts, walnuts, wonderberries, garden huckleberries, barberries, snowdrops, rocks, pears, plums, peas, squashes, carrots, parsnips, beets, chard, onions, sage, cabbage, cucumbers, pumpkins, ferns, daffodils, pie-



State Steward Niles' Attractive Exhibit at Mancelona Grange Fair.

our postoffice, and even this distance soon aggregates into a considerable journey; it was six miles in either direction to stores, railroads, express, telegraph and doctors' offices, and sixteen miles to the county seat. One day, the record recites, father drove to the county seat to have some legal papers made out and, upon receiving them next day by mail, discovered that a mistake had been made which necessitated another thirty-two-mile drive. Moreover, there was no telephone by which to catch the team, which might be out on the road, with a forgotten errand. With a large family and the hired men and their families, implements, horses and other animals attendant upon the operation of a four-hundred-acre farm, someone was ailing or something was getting out of repair, supplies were running short or accidents occurring continually, and someone was in requisition most of the time to meet these exigencies.

The rapid changes made in country life during the past forty years often lead us to conclude that its pioneer conditions are quite weeded out. Not altogether, for this item of a "few miles" still hampers us in many places, as is shown by a letter from _____ county: "R. is only 12 miles from here but the roads are so rough we could not go in the summer;

plant, geranium plant, grass and winter bouquets, cut flowers, 4 grasses—brezia, alfalfa, June grass and sweet clover—bundle of wheat, corn in stalk, autumn leaves and a hand-made rope. Mrs. Niles exhibited a quilt containing 7,770 pieces and 41 strips, worsted cushion, also pie, cake, bread, butter, and a barn scene with Mr. Niles, an Indian and a pen of pigs made out of potatoes.

Of the fair as a whole the local press speaks in the highest terms, with the expressed hope that the Grange may soon see its way clear to holding this annual fair on a larger scale and on grounds provided for the purpose.

COMING EVENTS.

National Grange, Forty-third Annual Session, at Des Moines, Ia., Nov. 10-19.

Michigan State Grange, Thirty-seventh Annual Session, at Traverse City, December 14-17.

Pomona Meetings.

Oceana Co., with Sylvan Grange, Saturday, Nov. 13. Bro. J. K. Campbell, state speaker. Election of officers.

Lapeer Co., Young People's Meeting, at Attica, Friday, Dec. 3. Postponed from Oct. 30.

Oakland Co., with Wixom Grange, (all day session), Tuesday, Nov. 9. Miss Jennie Buell, state speaker.

Gratiot Co., with Liberty Grange, Saturday, Nov. 27. Bro. Jason Woodman, state speaker. Election of officers and of State Grange delegates.

Kent Co., with Cedar Springs Grange, Thursday and Friday, Nov. 26 and 27. Bro. Colon C. Lillie, state speaker.

Coupon Brings a FREE SAMPLE of PAGE WOVEN WIRE FENCE!

Page Fence holds the record for long and satisfactory service. It has been on trial twice as long as any other—a quarter of a century! It is made of Page Process High-Carbon Steel and has double the tensile strength of any other fence on earth. The Galvanizing is 50 per cent heavier.

The coil in horizontal wires gives an even tension, in any temperature, and makes Page Fence self-adjusting over the most uneven surfaces.

Saves 50 Posts Every 100 Rods

Besides Staples, Nails and Labor

Page Fence has such elasticity that it will withstand a terrific impact without breaking. If a tree falls across Page Fence it will spring back to position the moment the tree is removed. No stampede of stock can break it. Nothing gets through it.

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The real truth is that Page Woven Wire Fence is the cheapest fence you can buy, when you figure the cost of erecting. It is not only cheaper at the start, but it's cheaper in the end. It gives more years of service than ordinary fence. The posts may be replaced again and again, and the fence will still remain slightly and serviceable.

Send Coupon for FREE SAMPLE

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Please send Free Sample of Page Woven Wire Fence and

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☐ Stock ☐ Hay ☐ Fruit

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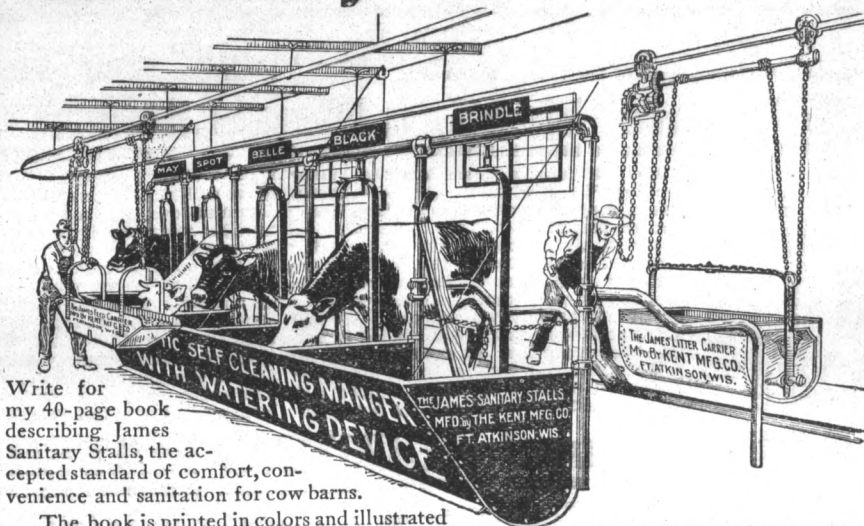
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I've had my say about fence in this book and I want you to read it. Most profitable fence in the world to buy, as I'll show you.

THERE'S A NEW THING ABOUT IT
It's now sold delivered to fence-buyers everywhere—not just in certain sections, but everywhere in the U.S. Plainly priced in the book (factory prices) and the factory pays the freight to your railroad station.

Send me a card or letter for book right away. I'm going to send out 45,000 of these books to farmers this fall, but I'll get them out promptly. Address FARMER JONES, Fence Man for

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15 Cents a Rod

For a 22-inch Hog Fence; 16c for 26-inch; 19c for 31-inch; 23 1-2c for 34-inch; 27c for a 47-inch Farm Fence. 50-inch Poultry Fence 37c. Lowest prices ever made. Sold on 30 days trial. Catalog free. Write for it today.

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Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free.

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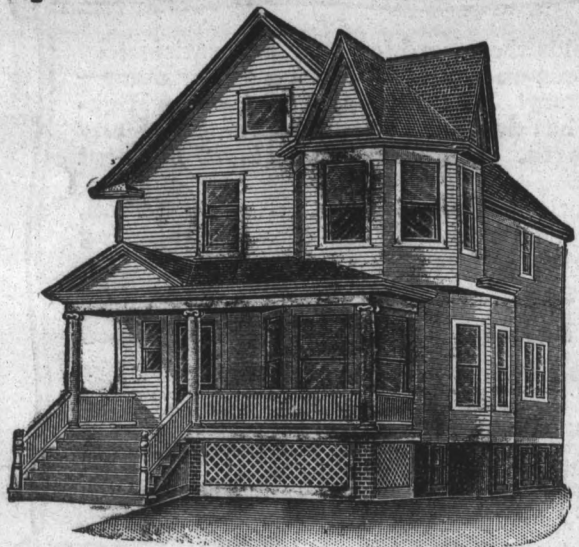
Strongest, most durable fence made. Heaviest, closest wires. Double galvanized. Practically indestructible. Stock strong. Chickentight. 15 to 35c per rod. Sample free. We pay frt.

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\$650 BUYS THE MATERIAL TO BUILD THIS HOUSE

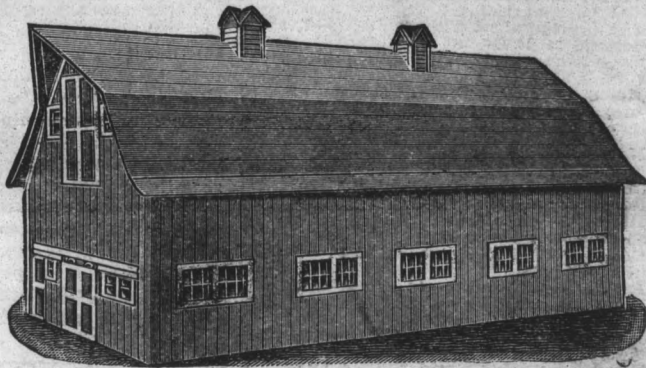


Q This is our leader, the best seller of any house ever designed anywhere, by anybody, at any price. Why? Because it comes nearer to filling the requirements of a home than any house of its size ever built. It is 23 ft. wide and 33 ft. 6 in. long, not including the porch. It has seven rooms, bath, pantry and a large front porch. It is of handsome appearance and symmetrical proportions. It is magnificently lighted and perfectly ventilated. Embodies every modern comfort and convenience. Our extremely low price makes it the best bargain proposition on the market. We cannot recommend this design too highly. Even if you don't need a home, build this home for an investment. You can sell it 10 times over before it's finished. This is our house design No. 6; refer to it by number when you write.

\$498 BUYS THE MATERIAL TO BUILD THIS BARN

Q The above is an illustration of our famous Joist Frame Barn. It is the most practical and serviceable barn ever designed. It may be built at a price very much cheaper, and has more available space, than any other style. We can supply this barn in six different sizes, all of the uniform width of 36 ft. The above quotation covers a barn 36 ft. wide by 48 ft. long and 18 ft. high. The roof is of the self-supporting type, there being no posts in the hay loft. There are 6 windows on each side, 3 in each end, and 2 in each gable, so the barn is thoroughly ventilated. Our price covers all the lumber, mill work, hardware and nails required to complete this building from the ground up. We can also furnish this design in larger sizes.

Refer to this Barn as Design No. 221



We Have Houses Ranging from \$290 to \$1300, Barns from \$200 up

Q Of all wonderful offers advertised, this unquestionably is the greatest. The Chicago House Wrecking Company offers to sell you a saving of from 25 to 50 per cent all the building material needed to construct the house and barn shown above. This means we are absolutely leaving out all middlemen's profits and are dealing direct with the consumer. Our ideas are absolutely original, and no other firm in the world has ever before advertised to completely supply the material such as is offered herewith. We are the largest concern in the world selling lumber and building material direct to the consumer. We propose to furnish you everything for the construction of these buildings as outlined in our offer. It will be in accordance with specifications which are so clear that there can be no possible misunderstanding. Our prices as given above means for the material all correctly laid out in accordance with our plans and specifications.

Q We will furnish you an itemized material list. We will also supply blue prints, architect's specifications and full information needed to properly and economically erect these buildings.

This is not an experiment with us. During the past year, we have sold upwards of five hundred complete homes and barns. All the material is stored right in our main warehouse and yards at Chicago, ready to ship promptly upon receipt of your order. We guarantee every stick furnished to be absolutely brand new. Don't pay any attention to what jealous lumber dealers or unscrupulous merchants may tell you to the contrary. We would not dare to advertise any false statement. If you buy a building and receive any material that is in any way, shape or manner to the contrary of our general and specific representation, we guarantee to take back such material at our expense and replace it with material strictly in accordance with our description, or to refund you the full purchase price of same, or make such adjustment as meets your entire approval. Q As to our terms: They are as liberal as any one can ask for. If you do not want to send money in advance, we will make shipment, to be paid for after it reaches destination, provided you furnish us with absolutely satisfactory bank references. Q Our literature explains, fully, our operations. On application

we will furnish you the names of hundreds of satisfied customers in all parts of the country. On request we will quote a price delivered, freight prepaid, at your railroad shipping point, thus there will be no question as to the ultimate cost of the material. You will know all the facts before you buy. We are not asking you to buy a "cat in the bag." You will see what you buy with open eyes, and we will prove our terms as liberal as you can possibly ask for.

Q We secure many standard stocks of lumber, building material and merchandise at various forced sales, besides controlling large quantities of the lumber's cured direct from mills in the North, South and Pacific Coast.

Q Our yards cover over forty acres of land. Our institution is known everywhere. When you deal with us, you are saving big money. Thousands have saved in the past and are now our steady patrons. It stands to reason that we are bound to give you a square, honorable deal. We are business men and recognize the meaning of a satisfied customer. If you deal once, you will buy from us often. Write for detailed information.

BLUE PRINTS FOR ANY OF OUR DESIGNS FREE TO PURCHASERS

Q We will furnish you blue prints for either of these designs or for any of the designs shown in our "Book of Plans" without one cent of cost to you, provided you place the order for the bill of material with us. It will be accompanied by working plans and material list. The itemized material list accompanying same is complete, both in the description of the material used and also in describing the purpose for which each item is intended. If purchased in the usual way from the architect, these plans would cost from \$25.00 to \$75.00. With the aid of our plans, specifications and material list, anyone reasonably familiar with building construction can superintend the erection of his own house or barn at a great saving.

Q Our Plan Book, a description of which is given below, illustrates many other designs in houses and barns. You will find that our houses can be built for such purposes as will bring you in good returns for your money, even if you have no intention of living in the house yourself.

Q If you buy the building material from us, at our specified prices, we will furnish you the plans, specifications and material list without charge. If, however, you prefer first to receive the plans and study the possibility of applying same for your own particular use, then we make you the following proposition:

Q We will furnish you with a set complete for either of the buildings above or for any of the buildings shown in our "Book of Plans" referred to elsewhere in this advertisement for the sum of \$2.00, which amount you can remit to us and the complete set will be sent to you, all carrying charges prepaid by us. Upon receipt of them, if you decide to make the purchase of the full bill from us, then we will allow you \$2.00 to apply towards our price. If for any reason you decide not to use the plans and prefer to return them to us within thirty days after receipt, then we will refund you \$1.50, thus making the information cost you only 50 cents. We assure you this does not pay for the expense involved.

Hot Water Heating Plants, Steam Heating Plants, Plumbing Material



Q We will furnish a complete Hot Water Heating Plant for the design No. 6, shown above, consisting of Sectional Hot Water Heater, handsome Cast Iron Radiators, all necessary pipe, valves and fittings, including a complete set of blue prints, working drawings and complete specifications, so simple that any ordinary mechanic handy with the use of tools can easily install plant. We will also loan the necessary tools needed in putting in such a plant. At the same time we will furnish you with a written, binding guarantee, covering 365 days, making you perfectly safe as to the quality of our material.

Q We will supply all the above for the sum of \$216.50; or we will furnish you a Steam Heating Plant, similar description as above, for the sum of \$180.80. Every bit of material used in these plants is guaranteed brand new and first-class in every particular. We furnish all needed Plumbing Fixtures for House No. 6, shown in this advertisement, and consisting of Bath Tub, Closet, Washstand, Kitchen Sink, and including all necessary pipe and trimmings complete to install everything needed above the ground, for the sum of \$97.50. Bathroom Outfit like illustration is \$37.50.

Q Any mechanic handy with the use of tools can install both the plumbing and the heating material in this house. We can also quote you prices for the installation of Plumbing and Heating for any of the designs shown in our "Book of Plans."

Q We will furnish you the paint needed for House Design No. 6, shown above, including hard oil finish for interior, two coat work, and including porch floor paint, for \$26.50.

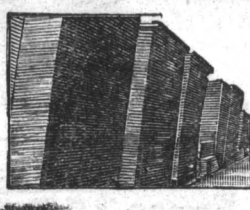
Q We will furnish a Hot Air Furnace outfit for design No. 6, full specifications of which will be furnished you, for \$99.30.

Q Our special Heating Catalog explains fully just what we include on all heating jobs. We can supply Heating Apparatus and Plumbing material for any house, new or old. Write for our descriptive matter and handsomely illustrated booklet.



LUMBER and BUILDING MATERIAL at 25 to 50 Per Cent SAVING

We say to you positively that no matter what your wants in the line of building material, we can supply it, and always at a saving. This statement is backed by any number of unsolicited testimonials from those who have taken advantage of our liberal offers of the past. Especially do we urge you to act now. Never in years has lumber been offered at such low prices as we are offering it for at the present time, and it is good lumber, too, first-class, right up to grade, and as good or better than that carried by any local dealer anywhere. Every stick of lumber that



we sell is new. Nothing "wrecked" about it. It is as good as can be bought. We haven't a piece of second-hand lumber in our stock, and if we did have it we would not sell it by mail. We are selling only new, clean stock, no shop-worn material, and all our grades are guaranteed. Then, our MILL-WORK. You cannot improve its quality. It's as good as anyone wants. It's better than 90 per cent of the dealers have for sale. We can furnish you every single thing you may need in the line of Doors, Sash, Mouldings, Sideboards, Mantels, Interior Trim, or anything else. In other words, each and every article that comes into the construction of a building of any kind, and that includes also Structural Iron, Iron Beams, Iron Columns, or anything else in the Iron line.

We have a complete stock of ROOFING MATERIAL, both tin, steel, iron and ready-roofing. We can furnish you shingles in all grades,

everything in the way of plumbing and heating material. We can supply your wants in Builders' Hardware at a saving of 25 per cent or more. We mean your Nails, your Builders' Hardware and your Tools. And so it goes all the way down the line of material you need. We save you money everywhere, and the way to convince you of this fact is to have you submit to us a list of building material that you are in the market for. Let your carpenter or contractor, or whoever has charge of your building operations, hand us a list of the material you need, and we will give you a prompt estimate. We will, on application, name you prices, freight prepaid.

We will show you by actual proof that we can do everything we say in this advertisement. There isn't a single overdrawn statement in this advertisement. Send us today your list of lumber and building material. Give us an opportunity to figure with you.

OUT OUT THIS COUPON!

CHICAGO HOUSE WRECKING COMPANY, Chicago

Send me free of all charges:

Your complete General Catalog No. 29

Your Special Book of House and Barn Plans

Your Book on Heating and Plumbing

If you desire to send for plans at once, fill in this space.

Enclosed find \$2.00 in for which send me your

complete set of blue prints, plans and specifications for design No.

I am interested in the following items:

Name

Town

County

State

R. O. Box

OUR FREE BOOK OF PLANS

Q Our Book of Plans is unquestionably the finest publication of its kind. It shows, true to life, about 150 houses and barns, describes them in a general way, and shows the first and second floor designs of all houses and interior suggestions for all barns; gives price complete and at the same time shows the additional cost of plumbing, heating and painting. Even if you have no immediate intention of building, you must send for this book. Fill in the coupon to the left and we will send it to you at once.

Q Complete Blue Prints of any of the designs are furnished at \$2.00 each with privilege of returning same and receiving a credit of \$1.50, so the net cost would be but 50 cents. Or keep the Blue Print, and when you purchase your building material from us for the complete construction, we will give you credit in full for the \$2.00 charged you for the plans.

CHICAGO HOUSE WRECKING CO., CHICAGO

FREE Mammoth Catalog No. 29

Q Our mammoth General Catalog containing 10,000 bargains of merchandise for the home, the field, the factory and the office. Represents our complete stock bought at various Sheriffs', receivers' and Manufacturers' Sales. Gives illustrations and explains our quotations. Tells all about our wonderful stock. It is a price maker in every sense of the word. You will find that in every instance we undersell regular merchandise houses. Goods are described for just what they are. There are some 450 pages of interesting quotations and reading matter. You will also find that we show our RUGS, CARPETS and FLOOR COVERINGS in their natural colors, so that you can see just what they look like after you receive them. You must write us for this book at once. It cost about \$1.00 to place a catalog in your hands, but we mail it free of all charge if you fill in the coupon to the left.



READ WHAT THE CHICAGO HOUSE WRECKING CO.'S CUSTOMERS SAY:

NOTE:—We do not reproduce the Post Office address of the customers for the reason, first, to prevent unscrupulous would-be competitors and members of the various Lumber Trust Dealers Associations from writing anonymous letters, causing our Customers a lot of unnecessary correspondence. Second, To protect our customers from the merely curious.

To anyone showing sufficient interest and an honest intention to purchase, we will be pleased to furnish the Post Office addresses of any or all that may be requested.

Kentucky.
Chicago House Wrecking Co., Chicago, Ills.
Gentlemen:—The car is unloaded and my contractor and builder are more than pleased with the material and the work is progressing rapidly. Very faithfully,
(Signed) M. S. BROWNE.

Pennsylvania.
Chicago House Wrecking Co., Chicago, Ills.
Gentlemen:—My car of lumber containing house design No. 6 arrived April 26. I started in the morning to unload it and it took part of the next day until we were thru. Furthermore, wish to say I like

all the material, the millwork is extra fine and the hardware is fine.
(Signed) HARRY KEENER.
Pennsylvania.
Chicago House Wrecking Co., Chicago, Ills.
Gentlemen:—I received your lumber, (House Design No. 149), and I have got

it hauled and I have saved at least \$400.00 on my house by buying from your Company. Your lumber is better than is sold here. All safely landed but the paint. Please send it.
Thank you for your kind attention.
(Signed) NEHMIAH McCANDLESS.