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FARM NOTES.

Disking Alfalfa.

I have $2\frac{1}{2}$ acres of alfalfa sown in 1909. I got a very good catch, which was pastured with hogs, and later top-dressed with stable manure. This was in the summer of 1910. In the fall I noticed there was quite a lot of June grass and other weeds in it. Now I would like to know when is the best time to give it a good disking.

Huron Co.

D. G.

There is a good deal of conflicting testimony in regard to disking alfalfa, both as to the time and method of doing the work and the benefits derived from disking it at all. F. D. Coburn, of Kansas, who has written a comprehensive work on alfalfa culture as most successfully practiced in that state and elsewhere under his observation, is a very strong advocate of disking, although he advises setting the disks rather straight, so as to split the crowns without cutting them off. On the other hand, J. E. Wing, of Ohio, who has had long experience in growing the plant, both in the west and in his native state, and whose opportunities for observation have been of the widest, states with equal conviction in his late work that disking should be carefully done, with not too sharp disks, which are set straight enough so there will be no danger of cutting off many crowns. He contends that splitting the crowns, which others advocate, for the purpose of causing a more profuse production of stalks, would be like splitting the trunk of an apple tree to cause the throwing out of more limbs, and that it cannot but damage the plants. He has found it profitable to disk after fertilizer had been applied or when grass encroached too greatly on the plants, and advises a cross disking to get results in the latter case, rather than a severe disking with the disks set to dig or cut too much.

Unfortunately, alfalfa has not been grown long enough or extensively enough in Michigan to afford very positive evidence as to the best methods of handling it where the grass encroaches upon it or where for any reason it does not appear to thrive. But there are some Michigan growers who are strong advocates of the free use of the disk. It would appear to be a very reasonable proposition that, where there is sufficient grass to endanger the stand a severe disking would be a profitable experiment, since little could be expected from such a stand if nothing is done to it. But alfalfa starts early in the spring, and if the plants are alive and well inoculated it will get the start of the grass. I have seen a number of fields of alfalfa that produced fair crops which were pretty well seeded to June grass, but which looked to be fairly free from it before cut the first time. Yet there is no doubt that they would have produced better crops, and especially second and third crops, if the grass had not been present, and if it can be kept in check by disking without materially injuring the stand of alfalfa it will certainly pay to disk. However, we believe that the disking ought to be carefully done when the plants are small, at least. If a plant is cut off it must die and thin the stand just that much. But if the disking is done as early in the spring as practicable and before the plants start to grow, a light disking each

way of the field, followed by a good harrowing with a spike-tooth harrow, will discourage the June grass considerably and should not hurt the stand of alfalfa to any extent.

Further disking should depend on conditions. Some growers advocate disking in the fall after the last cutting, and some go so far as to recommend it after each cutting. However, this is a problem in which experience is better than advice, and wherever or whenever disking is resorted to by a Michigan grower, a strip should be left without disking as a check upon the experiment. In this way positive information will be gained which will be the best possible guide for future practice.

But the presence of June grass and oth-

crop. The economy of this crop warrants careful experimenting with it.

Sweet Clover.

Is sweet clover a good fertilizer and is it any good for hay? How long does it take to grow it? When should it be sown, and should it be seeded with a grain crop or alone? Does it prepare the soil for alfalfa, and if so what does the seed cost and how much should be sown per acre? I am thinking of sowing about five acres, and turning it under as green manure to build up the soil. Is there any better way of accomplishing this result?

SUBSCRIBER.

Sweet clover, like the other legumes, is a nitrogen gatherer and as such is a soil renovator. It is a biennial, completing its life cycle in two years and dying, unless reseeded, either artificially or naturally. Like alfalfa or the other clovers, it can be seeded alone or with a nurse crop,

grow sweet clover and plow it under as suggested, any other leguminous plant would be just as satisfactory in this respect, such as common field peas, which could be hogged down before plowing under.

Inoculating Alfalfa.

Last spring I sowed one acre to alfalfa. It came up nice and thick in places, but the cold and wet seemed to kill it. In the fall it came on again but was uneven and of a light green color. Will it be best to plow and reseed this spring, and where can I get the inoculated seed that will grow a dark green plant, if there is such?

Ionia Co.

W. E. B.

Evidently the trouble with this alfalfa is that the bacteria which are necessary to the successful growth of alfalfa are not present in the soil. It would be the better plan to let the crop stand long enough in the spring to determine whether natural inoculation has taken place to an extent which will warrant letting it stand, and if not it would be more profitable to plow and reseed as suggested, or devote the land to some other crop, as the stand will not be a success without the presence of the bacteria. As has been stated many times in the columns of the Michigan Farmer, the best method of inoculating is to secure some soil from a successful alfalfa field and sow on the land when it is being fitted for alfalfa, harrowing it into the soil as soon as sown. If the soil cannot be readily obtained the seed may be inoculated with a pure culture of the bacteria, which can be secured from the Agricultural College at nominal cost for experimental purposes. This should be done just before the seed is sown. Seed already inoculated cannot be obtained.

The Bean Crop.

Please give advice as to raising beans, including what kind, when and how to plant and on what kind of soil. Is the crop hard on the land?

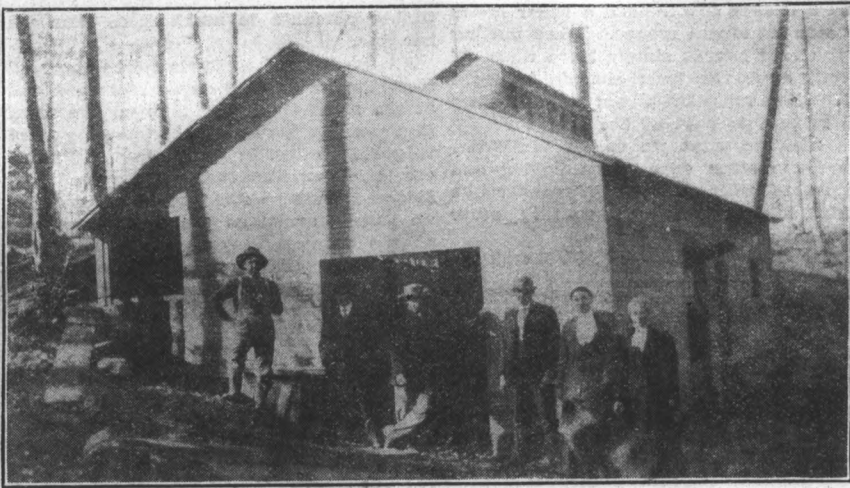
Ottawa Co.

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The bean crop is an important one in Michigan, our state being first in the Union in the production of beans. Until recently the common white beans have been almost exclusively grown, and are still the standard sort. The small navy or pea bean, is the variety which has found most favor with growers. As with other crops the time of planting is a subject of difference of opinion among growers, but the bulk of the crop is ordinarily planted as soon after the corn is in as possible, the last days of May or the first of June, depending upon the season. This brings the ripening and harvesting period at a more favorable season than if the

planting is delayed until later. From one-half bushel to three pecks of seed is used per acre, more growers preferring a little more than the minimum mentioned, than any other amount. The bulk of the crop is planted in drills from 28 to 36 inches apart. With good preparation of the soil the crop is easily kept free from weeds when so planted for the reason that the seed germinates quickly and cultivation can be commenced very soon after planting.

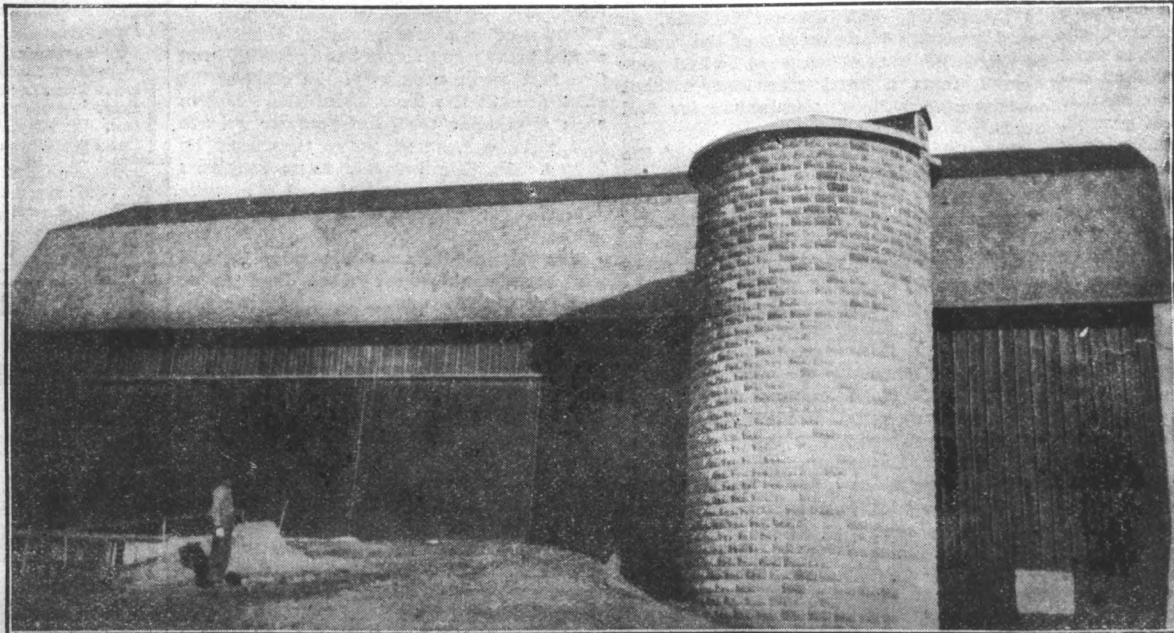
Beans will grow on a great variety of soils, but the better the soil the better the crop. Also, the better the place the beans are given in the crop rotation, the better the results that will be secured. Formerly beans were commonly used as an ex-



Sugar Camp on Geo. H. Jewett's "Elmwood Farm," Allegan County, Mich.

or foreign plants in practically all of the alfalfa fields seen in Michigan is a strong argument for the better preparation of our land for the crop before the seed is sown. If alfalfa is sown, following a cultivated crop, and the land is fitted without plowing and kept cultivated for a sufficient time in the spring to allow all weed seed near the surface to germinate and be killed, there will be far less need to discuss the safety of a disking or cultivation of the soil which will be severe enough to kill these enemies of the plant. There will be more alfalfa sown in Michigan this spring than ever before, and it should be remembered by every farmer who will try it the coming year, that the land cannot be too free from weeds and grass, if we would insure success with the

preferably in the spring or early summer in the ordinary season. While it can be made into fairly good hay if cut before too advanced in growth, stock do not like it as they do the other clovers, and it seems to be somewhat uncertain, like alfalfa, where the proper bacteria are not in the soil. It harbors the same bacteria for which alfalfa is also a host plant, and in this sense is a step in the right direction in preparing for the growing of alfalfa. However, alfalfa is so much superior to it that it would not seem profitable to sow it for this purpose, since the soil can be artificially inoculated for the alfalfa, after which it would probably be nearly, if not quite, as easy to get a stand of alfalfa as of sweet clover. While it would undoubtedly prove beneficial to the soil to



Concrete Block Silo on the Farm of Henry Robertson, of Ionia Co.. Blocks are 8x10 in., 1 to 6 of Cement and Sand.

tra crop in the rotation between corn and wheat, and the resulting depletion of the soil gave beans the name of being hard on the soil. This is not strictly true, however, since the plant is a legume and a nitrogen gatherer. But, like other cultivated crops, it hastens the nitrification of the vegetable matter in the soil, and the substitution of beans for the old summer fallow could hardly have been expected to prove beneficial in the effect on the land. In late years, however, more farmers have given beans the first place in the crop rotation with better results, both in the crop secured and in the conservation of soil fertility. The best place for the crop is on a clover sod, and when so planted and followed by a grain crop in which the land is again seeded to clover or, if well fertilized, followed by sugar beets as is the practice of some growers, satisfactory results will be secured.

Fertilizers and the Crop Rotation.

I have a field of sandy loam which has been cropped for four or five years without seeding. I wish to put it to beans and then to wheat this fall, using fertilizer on both crops. How much fertilizer would you advise me to use with the beans, and should I run the fertilizer in with the beans or on both sides of the row? I have been told that fertilizer run in with the beans will kill the germ so the seed will not grow. Also, how much should I use with the wheat?

Gratiot Co.

A. S.

It is poor policy to crop any field, and particularly a sandy, open soil, for so many years in succession without reseeded to clover. This practice depletes the soil of its vegetable matter or humus, making it more subject to the effects of the first drought that may occur, no matter how well it may be fertilized, and makes it more difficult to get a stand of clover when it is reseeded. Where this practice is followed the best results cannot be expected of the fertilizer, unless the season happens to be one in which the moisture is well distributed, so the crop will not be pinched by a drought. From 200 to 300 lbs. of a standard grain fertilizer per acre would, however, probably give profitable results on this land if it is to be handled as outlined, both on the beans and on the wheat. The fertilizer should either be drilled in over the whole surface of the land, or sowed through at least three drill hoes, one on each side of the seed as well as with it. Small amounts of fertilizer sown with the seed will not injure its germination but large applications sown with the seed sometimes will.

PROBLEMS IN MAPLE SUGAR MAKING.

Have burned large lump soft coal, with wood, in 4x16 ft. evaporator, very successfully for the past three years. Fire box of evaporator is 4x4 ft., equipped with regular wood grate bars. Wood is cut 2½x3 ft. long. To fire, place wood on back of grate, fill in front with coal next to doors. Care must be used not to get grates clogged after continued firing. Keep grates picked open through ashpit, using 8-ft. rod of ¾-in. iron, with 4-in. right angle turned on end.

I have plenty of wood but find I can evaporate faster by using one-half coal, and I believe coal cheaper as well. My sugar house, which I designed and built myself, with the assistance of my regular farm help, is 20x34 ft., and is located in the east side of creek bank running north and south. I cut away the heavy timber surrounding the sites, cut bank down 7 ft. perpendicularly on west line of building, grading dirt east into bottoms, establishing a level for floor, which is sand and gravel, west foundation wall of cement, 1 ft. thick and 7 ft. high against bank, east wall 1 ft. high out of ground, foundation walls of cement for the ends of building are built in sections, varying in height to conform to the grade of the banks. Foundation wall omitted under doors. The studding on west side is 2 ft. high, on east side 8 ft. and on ends of height to level of plates. Rafters are 12 ft. long, projection of eaves 10 in., roof boards 1 ft. wide, sheathing laid tight together; roof best quality 6 in. cove siding, 6 in. yellow pine covers building. Doors hung on rollers. Partition across building making woodshed, and firing room 14x20 ft., in south end of building. Boiling room 20x20 ft. in north end. Ventilator on top of roof 2½x14 ft. and 2 ft. high provides for escape of steam. Two openings 1½x10 ft. directly under eaves on each side of boiling rooms provides further ventilation, said openings fitted with doors hinged on bottom, to be closed when wind is strong. Roof ventilator provided with similar doors. Storage for sap is cement tank on

outside of boiling room, 6x20 ft. and 4 ft. deep, covered with cement arched to 5½ ft. in middle of tank. Tank is built into bank and is under the ground, the west wall of foundation forming one side of tank. A cross wall 4 ft. high divides tank into two sections and permits the cleaning of one section during continuous runs. Entrance to same is provided through man-hole on top. Bottom of tank is a trifle higher than evaporator, so sap feeds in without pumping. A spring covered up when grading in northeast corner of boiling room, tapped with small force pump, gives abundant supply of water for cleaning up, and drinking as well. Building cost \$175. Have 1,500 maple trees. Use bucket covers. Make syrup entirely, and find it profitable. (A cut of this building is shown on first page).

Allegan Co.

G. H. JEWETT.

WOOD AND COAL MIXED, BEST FUEL FOR SUGAR MAKING.

Noticing the inquiry of A. M. and your request in regard to burning soft coal in a sugar arch: We have used soft coal nearly every spring, although we have never attempted to use it alone. We have an evaporator—with grates three feet long; use 3-ft. wood or a little less. When we wish to use coal we fill the arch with wood. After it has burned down some throw in a good big pail of coal, let this burn down some, then fill up with wood and repeat. In this way we get a very hot fire and save wood. But buy a good grade of coal, as some coal will not burn up clean, and gets in the grates and bothers the fire. In burning coal, when you let your fire go down, sweep off the bottom of your pan, as soot gathers on it worse with coal than with wood.

He also asks how to build a sugar house so as to let steam escape. When putting on the roof boards simply leave them off directly over the barn altitude 3½ or 4 feet. Then spike 2x4 pieces on the rafters and raise this part of the roof 2 or 2½ feet, making what we call a ventilator. Leave the sides open when boiling and the steam will go out. When through making in the spring board up till another year.

Barry Co.

W. N. DEVINE.

WEEDS IN MICHIGAN.

Dr. Beal, of the M. A. C., is authority for the statement, "Years and years ago no new farm in the wilderness of Michigan contained more than 20 to 35 kinds of weeds, as there were not more than 35 sorts in the entire state, while at present there are not far from 250 kinds." The toll taken from our farms by way of lessened crop yield, and increased cost of labor to keep the weeds down is enormous. And when one sees patch after patch of quack grass, and in some counties whole fields given over to it and cut for hay; and Canada thistles everywhere, even whole fields surrendered to them, one wonders where it all leads to or when our farmers will arouse themselves and make a systematic effort to stop the spread of weed seeds, and the introduction of new weeds. I was upon a newly seeded field of alfalfa in Shiawassee county last summer, and the owner pointed to two different weeds new to him and to me, asking if I knew what they were, and adding that he had never seen any like them before upon his farm. This field was full of weeds but these two were conspicuous because of their number and luxuriant growth. They were undoubtedly introduced with his alfalfa seed, as were probably many others of the weeds in the field. This alfalfa seed he had purchased from a local merchant without testing and without examination for foul seeds.

Undoubtedly the greater number of the weeds of Michigan have been introduced in our grass, garden and grain seeds imported from other states and foreign countries. If every farmer would refuse to purchase his grass, garden or grain seeds until tested for purity their importation would largely cease. Many of our careful farmers do this but the vast majority do not, and the first must suffer from the weed seeds blown by the winds and carried by birds and animals from his careless neighbor's farm. A rigid enforcement of our present weed laws would aid in this last respect, but there are many townships in the state where no attention whatever is paid to the law. If we had had a pure seed law as we now have a pure food law, many of these weed pests could never have entered Michigan and thousands of dollars would be saved our farmers annually. Quack grass and Canada thistles were imported. Their dam-

age is already done, but it is not too late to protect ourselves against the importation of others that may perhaps be just as troublesome. Here is hoping that our present legislature will give us a good pure seed law that extends a test for germination as well as a test for purity, or freedom from weed seeds. In other words, we should know just what we are buying when we buy seeds as we know when we buy commercial fertilizers, foods, etc.

Ogemaw Co.

H. B. FULLER.

THE CARE OF THE FARM WOODLOT.

At the present time there are hundreds of acres of farm woodlots in the middle west that are coming a long way from paying out. Some of these might be made to pay out but they will never even come close to it under the present system of management. Then there are hundreds of other acres which stand no chance of ever paying out but which are kept on the farms for the sake of appearance or sentiment. There are many farmers who will not cut a tree unless they are compelled to do it. In either of these cases, by means of a little care these acres can be made to produce more than they are now producing. If there is no chance of a thing paying out at all it is better to lose but one dollar on the proposition when its perpetuation means the losing of two.

In the first place, the pasture lot cannot be the wood lot and pay out as well as it otherwise would. The pasture and the woodlot proposition do not go together and the sooner this is generally appreciated the better. When animals graze in the woodlot they eat down all the young seedlings so that the further growth of the lot is stopped. The second growth timber amounts to much more than we imagine.

All the "weed" trees should be removed from the lot as they do no real good and at the same time they take up the room that would otherwise be occupied by more valuable species. In this cleaning up process it is essential that all the dead and diseased trees be removed, for these take up room as well as the weed trees and at the present time they are far more valuable for the purpose of either timber or wood than they will be when the disease or the decay has progressed farther. Just at the present such trees have more good in them than they will ever have again. This does not mean that it is necessary that all these trees be removed at once, but when you go out to get a pole or to cut some wood do not take the first tree that you happen upon, but select the same with the ultimate end of forest conservation in view.

"Forest conservation to most people means the saving of mature trees and nothing more. Real conservation takes all into account that is of value, as well as that which is of potential value." The most valuable trees in the woodlot are the young ones and the manager should aim to keep these growing. A mature tree is a rather insecure investment and yields a rather low rate of interest and at the same time occupies the same amount of ground that would be occupied by a number of small trees.

Common sense is essential in weeding out a wood lot. This should be done every five years, and at least every eight years. Oftentimes the mature trees should be left in the forest to afford shade for the younger growth and the loss on the mature tree will be at least balanced by the protection that it affords. When seedlings are especially thick they should be thinned so that they are at least five feet apart each way. In cutting the older growth the trees should be felled in such a manner that the younger growth will not be harmed more than can be helped. In thinning out these seedlings it is, of course, essential that the more valuable species should be left remaining in the lot.

It is claimed that a well wooded lot will pay excellent interest when land is as high as \$50 an acre. Thus the woodlot on the average farm in many sections of the country will pay out. Then again, when the land is more valuable than this, and when the owner wishes such a lot on his farm, he can, by the right sort of management, make far more of it than he does at the present time. The time that is needed to care for the average woodlot is very small indeed. What is more, the work need not be done at any specified time and so it may be done when the owner would not be able to do anything else, and so the labor required cannot be charged up at harvest wages.

Ohio.

CLYDE A. WAUGH.

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PEAS AND OATS.

Have 16 acres of corn stubble that I want to sow to oats and peas, and seed. How many peas to the bushel of oats should I use? The soil is good and they might go down before ripening. If I should conclude to cut the crop for hay when should it be cut and how should it be handled for best results?

St. Joseph Co.

A. W. W.

For a crop of peas and oats to be threshed and the grain ground, the rule is to mix the seed in equal parts by measure. What you want to get is a good percentage of peas to get a good percentage of protein in the grain ration. If you will use a variety of oats that has a stiff straw, and use a commercial fertilizer containing a good percentage of phosphoric acid I don't think that your oats would be liable to lodge much because this will stiffen the straw and hasten their ripening.

In case you should want to cut this crop for hay, cut it when the oats are in milk. Don't wait until the seed begins to turn hard, either the oats or the peas. Cure and handle the same as clover hay.

COLON C. LILLIE.

USING FERTILIZERS AS TOP-DRESSING FOR WHEAT.

Would it be profitable to sow fertilizer on wheat in the spring and harrow it in with a spike-tooth drag? If so, what kind should I sow?

Ingham Co.

W. S.

The practice of top-dressing wheat in the spring with commercial fertilizer is a practice not common in Michigan at the present time, although in New England this practice is getting to be quite common. I can only tell you from what I have read and learned from others and not from practical experience. It is claimed that where wheat comes through the winter in an unthrifty condition it is an excellent practice to sow from 300 to 400 lbs. of good soluble commercial fertilizer on the ground early in the spring. I am informed in very many instances that this has brought the crop forward and made a profitable crop out of it, where otherwise, judging from conditions in the spring, it would have practically been worthless.

It probably would be a good thing to follow the fertilizer with a drag if the ground is in such condition that it may be permitted. It would be all right to sow the fertilizer on, even before you could drag the ground and the spring rains will dissolve it and carry it into the soil to the roots of the plants. I would be inclined to think that it would not be necessary to drag after the fertilizer unless one chooses to do so.

Many practical farmers can testify to the practicability of using commercial fertilizer on oats. My own personal experience would warrant me in saying that that is one of the most profitable uses of commercial fertilizer. The oat plant is much neglected. Oats are put in hurriedly in the spring on poorly prepared ground and in many instances no manure or fertilizer of any kind is used. The result is that we have a very low average yield of oats when we ought to have a good one. My idea is that it pays to wait until the ground is in condition so that it can be worked up to make a good seed bed and then from 300 to 400 lbs. of good commercial fertilizer used per acre will be a very profitable investment. Use any good standard fertilizer made by a reputable manufacturer.

COLON C. LILLIE.

AMONG MICHIGAN FARMERS.

North Central Michigan is rapidly taking rank with the older parts of the state in all that makes up good farming. Portions of Gratiot county formerly were too wet for certain crops. But now it is the land of tile drainage and large yields.

While it is late in the season there are still piles of sugar beets that resemble the coke piles around an iron blast furnace. The tonnage of beets this year has been enormous. For once the factories have had all the beets they wanted to slice, and some factories are running on beets originally produced for some other factory to help close up the season.

Alfalfa ideas have inoculated the farmers and in all sections is this crop being started and with a good degree of success. The more general method of seeding being with some nurse crop, generally a bushel of barley in the spring. On some farms the alfalfa and clover seed were mixed and, while the clover did not stand the midsummer drouth, the alfalfa did, and alfalfa stock has gone up accordingly. Alfalfa advice is eagerly sought and the Michigan Farmer is often quoted as well as credited with much good done

along these lines. The sheep feeder this year is looking for a cheaper ration. The dairyman is always alert as to alfalfa. The hog raiser wants to test Coburn's statement that an acre of alfalfa will make 1,000 lbs. of pork. The poultry raiser and the bee man are also interested and are building on an alfalfa foundation. Finally, the man who has a farm that is somewhat blase from growing timothy hay and an excess of cash crops is looking for alfalfa as the restorer of fertility. This wonderful plant that can take the nitrogen from the air, and with its long roots go down several feet to bring up the mineral plant food that other plants cannot reach, is strictly first in the minds of our countrymen at the present time.

There is a new aristocracy arising in Michigan agriculture, not of wealth or birth, but of breeding, of education in genuine gentility. The work of an earlier generation was hard and they were in a measure enslaved by early farm conditions. The second generation had the foundations laid and the farm homes are models of convenience. Machinery has removed much of the drudgery. The Farmers' Clubs, the Grange and social opportunities are giving a flavor of that found in the old southern planter. There is found that genuine courtesy, deference and kindness that made the southerner such a delightful host. But the indolence of the southern planter is not found and local knowledge has largely yielded to wider fields of scientific acquirements.

Protein, carbohydrates, phosphoric acid, humidity, etc., are commonly used in farmers' language; while carburetors, resistance, heat and power units are the common terms of farm mechanics. It is this class of farmers who are making themselves felt and are soon to have an agricultural course in the Mt. Pleasant high school. The school commissioner of Isabella county is of the new agricultural type and the assistance he has been to the boys in the corn growing contest of that county is marvelous. Keen, healthy competition and the pleasure of the race has endowed country school life with renewed interest. A handsome American flag was one of the symbols of victory that went to the school district producing the best corn, in addition to the cash prize to the individual. Old Glory finds new fields to conquer in leading the young boys to victory in peaceful farm pursuits.

What is true of educational interest, agriculturally, in Isabella is found in other counties whose commissioners are at one with the advancement of agricultural conditions.

One of the noticeable things in the northern towns, where manufacturing is of minor importance, is the closer relations existing between the residents of the town and the farmers. The professional and business men own and operate farms. These men are equally interested with the farmers in agricultural matters. A banker and attorney as well in one of these towns told the farmers to help themselves to a marble deposit on his land, to see if it would aid in growing alfalfa. A million dollars is a considerable sum of money, yet the output of the farms marketed at one town in Isabella county last season, aggregated that figure, the statistics being compiled by an editor who also had farm tastes and traditions.

Shiawassee Co. JAS. N. McBRIDE.

SPRING VS. FALL PLOWING FOR CORN.

How should I handle a sod field that I wish to put to corn, put the manure on the sod and plow in the spring, or should the plowing be done this past fall and the manure put on the plowed ground? I have always had good luck with fall plowing the ground but I saw in the paper that it is advisable to put manure on the sod.

SUBSCRIBER.

4. When sod ground is plowed early in the spring, I never could see any difference, practically, from fall plowing. If one wants to cover the sod with stable manure, it seems to be necessary to defer the plowing until spring, because coarse manure put upon the surface will hinder cultivation, and then a rough plowed field is not a very nice place to drive over. You could plow your field in the fall, leave your manure in a large pile during the winter, and spread it on the land with a manure spreader in the spring. If spread thinly in this way, it would not interfere with the field operations.

COLON C. LILLIE.

Proved Eminently Satisfactory.

The Murray-Waterman Co., of Ann Arbor, who have been advertising fashionable strains of Jersey cattle, write: "Please continue our little ad. another year. It has proved eminently satisfactory to us, in fact, sells our cattle as fast as we can raise them."



THERE is no drudgery on the farm equipped with David Bradley implements. There is a joy in plowing with a perfect tool. The science and skill of David Bradley have been making prosperous and happy farmers for eighty years.

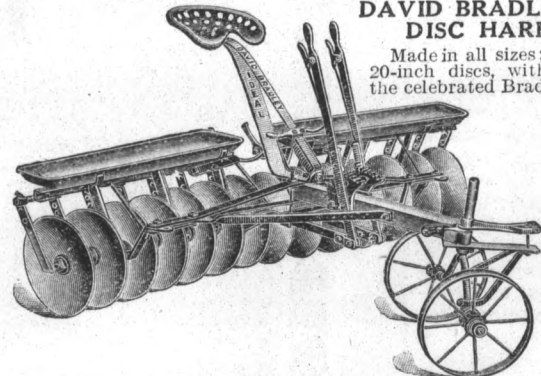
Bradley Quality is the standard at which all others aim. You are sure of getting it only in David Bradley implements—the only standard implements sold from factory to consumer direct at one-profit prices.

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The Strongest and Most Up to Date Disc Harrow Money Can Buy.

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steel scrapers, operated by foot levers, clean the entire disc. Throw-off levers on each scraper section enable the operator to raise scraper from discs at any time with team in motion. Saves wear and lightens draft when scrapers are not needed.

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Discs are finest quality steel, sharp and specially tempered to hold an edge, but not so brittle as to break.

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Refer to our big General Catalog for pictures, complete descriptions and prices of David Bradley Plows, Harrows, Planters, Cultivators, etc., the farm tools backed by eighty years of knowing how; or send today for our Book of David Bradley Farm Implements.

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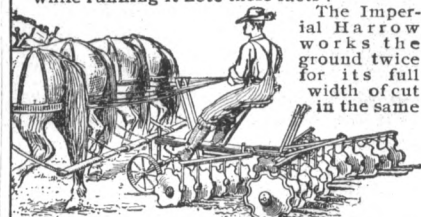
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We know that the new Imperial double disc, flexible frame, scalloped blade Harrow will save you money and time, and give you a better seed bed than any other implement. We know this through recorded tests, and from the experience of thousands of farmers throughout the country. We want you to know it, too, from an actual test of an Imperial, conducted by yourself on your own farm.

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Any Bucher & Gibbs dealer will be glad to let you have an Imperial Harrow to make this test. Get one from your dealer, and while running it note these facts:



The Imperial Harrow works the ground twice for its full width of cut in the same

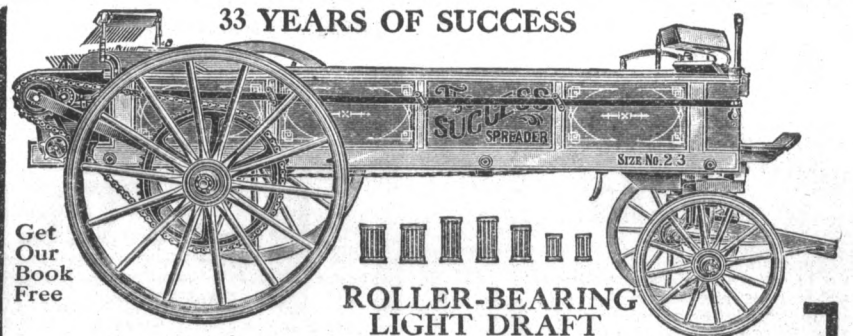
time it takes the old style harrow to do it once. Four horses hitched to an Imperial will do twice as much work as three horses with an ordinary harrow.

The specially designed, scalloped blade cuts to greater depth and more perfectly pulverizes the soil. The flexible frame lightens the draft and leaves a perfectly level seed bed.

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Kemp & Burpee Company, Syracuse, N. Y.

TESTING SEED CORN IN AN INCUBATOR.

Some time ago I inquired through the columns of this paper about testing seed corn in an incubator but I did not get much encouragement. I was determined, though, to try it for myself. I think that is the best way to learn any lesson on the farm. I used a hot-water incubator and took the bottom tray and put in several thicknesses of double-faced corrugated strawboard and marked it off in squares on the upper side. I had room to test 140 ears of corn, that is, there were 140 squares. Then I took four kernels from each ear and put them in these squares so that they would correspond with the number of the ear. I kept it moist for several days and it soon germinated. In fact, it was only five days from the time I put it into the machine till some of it had sprouts on two inches long.

About half of this corn was selected early in the fall and but a very few ears tested out, as compared to the rest of it. We did not get our corn all husked in the fall and some of this we selected as we husked during the winter, and of the 68 ears that we selected during the winter more than one-half tested out that showed no signs of vitality. This was the strongest argument in favor of selecting corn early that I ever had presented to me.

I have heard a good many times, and read it over and over, that we should select our seed-corn early in the fall but this settled it with me.

I am well satisfied with my experiment and believe it was a decided success. We will at least plant the good corn in one end of the field and watch for results. I believe we farmers in Michigan can improve our corn by being more careful about the seed.

Antrim Co.

N. G.

WHY HAVE LEAKY ROOFS?

There are not a few stables and out-buildings on many farms that have leaky roofs. Nothing could be more unsanitary for the live stock housed in them, or worse for the hay or other roughage, or the tools and implements which may be stored under such roofs. Generally the house roofs are kept in better condition because the women of the household insist on having them kept in such condition that the water will not soak through at every shower or with the melting of the snow which may accumulate on the roof. But even here there is sometimes neglect. In every case where a roof is neglected there is loss, not only on whatever it may cover but in the building itself, as the roof is the important factor in the preservation of the building from the rotting effect of moisture. Truly, a leaky roof is one of the worst "leaks" on the farm. But it is also one of the most easily seen, and when seen it should be promptly stopped. It is an unprofitable practice to procrastinate in the matter of repairing the leaky roof because it will be a more pleasant job to fix it next summer. The summer season will bring its cares and thousand tasks which will keep the owner of the roof busy early and late, and it will be hard to find the time to fix the leaky roof, and as there will be less immediate need of a good roof than in the winter season it is likely to be a repetition of the case observed in the "Arkansaw Traveler." The best way is to protect the buildings and their contents at once. This can be easily and cheaply done by getting any good brand of prepared roofing and putting it on according to directions. It can be rapidly laid on a pleasant winter day with the available farm labor, at no cost except for the material, while if delayed until summer, valuable time will be taken up on the job if it is not neglected entirely, which is all too likely to be the case.

Wayne Co.

C. T. H. B.

CATALOGUE NOTICE.

Fencing is a topic in which every farmer is vitally interested. It is made the subject of an instructive and convincing little booklet, written by Mr. Brown, of the Brown Fence & Wire Co., of Cleveland, Ohio. This booklet goes fully into the fence matter and gives the reader all the inside facts, usually considered as trade secrets, and shows him why he should avoid cheap, trashy, lightly stayed and poorly galvanized fencing that will not last or give satisfaction in service. This booklet tells all about a fencing made upon honor from the best material purchasable and by the highest grade of skilled labor obtainable. Write the Brown Fence Co., Dept. 49, Cleveland, O., for a copy, mentioning the Michigan Farmer.

In every line of business, under existing conditions, there is an effort to improve. Throughout the country the farm press and the bright minds of leading agriculturists are occupied with cultivation, fertilization and intensive farming. This question appeals especially to the farmer because his opportunities to succeed are far greater than in other occupations. One of the chief needs of modern farming is good

fertilizer

An acre of tillage land eight inches deep weighs 2,000,000 pounds (1,000 tons). An average dressing of concentrated fertilizer at the rate of 1,000 pounds per acre gives only one pound of mixed fertilizer to every ton of soil, or less than a grain of actual plant food to each pound of soil.

Yet this infinitesimal amount of good fertilizer, combined with the natural yield of the land, turns failure into success — produces profit in place of loss — leaving the soil in a better condition for producing succeeding crops.

We guarantee that our fertilizers are brought up to the highest state of perfection and are made just right to produce the best results. There is no guess-work about it.

Every operation in the manufacturing of our fertilizers is directed by expert chemists. Scientific formulas are carefully observed, materials and the finished goods are thoroughly analyzed, and when we print our guarantee on the bags we know that the goods are absolutely perfect and of the highest productive quality.

We want good reliable agents for unoccupied territory. Write us for further information.

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JOHNSTON machines cost less to maintain than less carefully constructed

tools and give many more years of perfect service. They represent the most advanced development along truly practical lines. There is nothing experimental, impractical or "freakish"



about them. The matters of simplicity, strength and durability are given especial attention. They are made by the original independent company to give perfect satisfaction.

We suggest you write to-day for the JOHNSTON 1911 catalog—it is full of valuable information concerning JOHNSTON Grain Binders, Reapers, Manure Spreaders, Rakes, Spring and Spike Tooth Harrows, Side-Delivery Rakes, Corn Binders, Mowers, Tedders, Hay Loaders, Disc and Orchard Harrows, and Land Rollers—all with a recognized reputation for being the most perfectly constructed machines made, yet they cost the farmer no more than cheaply-built tools.

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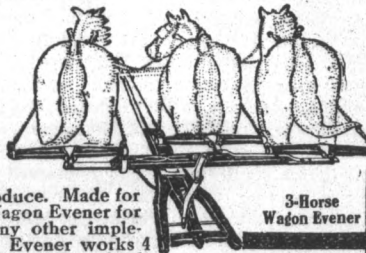
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horses abreast on gang, sulky or disc plow, 1 horse in furrow, 3 on land. No side draft; all horses pull equal. We make Clevises to attach our Evensers to all plows. **ASK YOUR DEALER FOR HEIDER EVENERS;** if he can't supply you, write at once; we will tell you where and how to get them. Let us prove to you the many points of merit, why you should accept no other kind, and insist on getting HEIDER EVENERS if you want the best. We also make doubletrees, singletrees, neck-yokes, etc. **HEIDER MFG. CO., 74 S Main St., Carroll, Ia.**

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and you hold the moisture in the ground. Cultivate shallow or deep as the crop needs it and you release the forgotten or unknown soil properties which are needed to make the crop grow properly. We have been making farm tools for 75 years and think we have a good line of Riding Cultivators as you need to choose from.



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Farmers having stumps and stones to blast should write for prices on dynamite.

LIVE STOCK

WITH THE EWES AND LAMBS.

Many of the troubles that flockowners experience during the lambing season are traceable to improper methods practiced in the management and feeding of the ewes during the winter months. Ewes that are allowed to become run down in flesh, condition and vitality, can hardly be expected to bring vigorous and well developed progeny and provide them with an abundant supply of nourishment. It is to the interest of every flock owner to maintain his breeding ewes in good flesh condition, not only because of its great influence upon the health and vitality of the ewes themselves, but upon the growth and development of the unborn lambs.

Ewes that are properly conditioned at the time they are mated and fed a ration of wholesome fodders, grain foods and roots or ensilage, will rapidly regain their normal condition, and be in a condition to properly nourish the growing foetus, by the time it begins to draw heavily upon their systems.

During the winter months the breeding ewes should be kept separate from other sheep and as they become more heavy with lamb it is desirable that they be divided into flocks of from 20 to 40, to prevent crowding and injuring each other. Ewes that are heavy with lamb should be handled with great caution and delicacy, and not be exposed to crowding or jamming, as often occurs in passing through a door or leaping over bars. Quiet, gentle handling during the winter months is very important in the successful management of the ewes during the lambing season.

The flock owner who breeds his ewes to lamb during the months of February and March while the weather is cold and changeable needs to have adequate barn room and to provide the ewes with comfortable and sanitary accommodations. It is the height of folly to attempt to handle early lambs without comfortable and well arranged sheep barns and pens.

I have found it very convenient and advantageous to have the lambing quarters so arranged that small pens five feet square could be easily constructed around the outside in the sheep barn as fast as required. This is a very simple matter when we have small gates, or panels, made of light lumber and constructed so that they can be easily put in place. These panels are easily put in place as fast as the ewes show signs of approaching parturition and it is thought best to put her by herself. By having them constructed around the sides it is only necessary to have panels for the sides and partitions between pens and it is easy for the shepherd to work among the flock.

When it is possible to keep the ewes that are nearly due to lamb, by themselves, it is judicious to cut down their rations and not feed them much grain or succulent food for a few days before they are due to drop their lambs.

As soon as the ewe shows uneasiness and strays off by herself away from the flock, she should be placed in a pen, care being taken to handle her very gently and not cause her to become unduly excited. The parturition of the sheep is generally severe, but artificial aid is seldom necessary, unless the lamb is abnormally developed about the head. In such cases the ewe will experience great difficulty and a little assistance at the right time and given in a proper manner will reduce the trouble and conserve the strength of the ewe.

Any assistance should be given in a careful and judicious manner, or it is liable to injure the ewe. As soon as the lamb is born the ewe will generally go to it at once and lick it, but if she does not, or appears exhausted, care should be taken to place it at her head at once, for many experienced shepherds believe that ewes forget their lambs when they do not see them at once and for that reason are likely to disown them. A careful examination of her udder should be made to ascertain whether it is caked or swollen and to see if the teats will discharge freely. The first secretions sometimes harden and close the orifices in the teats. This matter should be carefully removed and the swelling reduced by bathing the udder with hot water and gently pressing the milk out of the teats. If there are indications of inflammation or soreness, give the udder a good, thorough, but gentle rubbing with hot water. If it has not been previously done, remove all of the locks of wool in the region of the udder,

that might deceive the lamb, for many lambs have been destroyed, by swallowing locks of wool, which collect in their digestive organs and obstruct the passage.

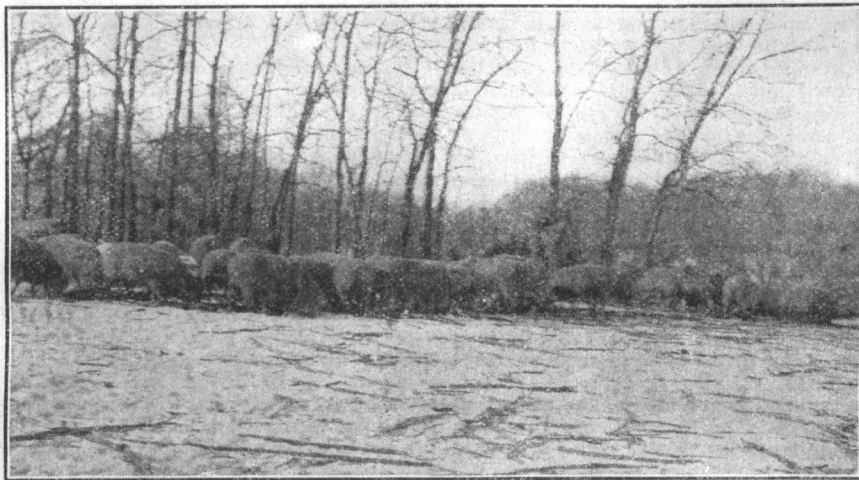
If everything goes right, very little special attention is necessary after the ewe and her lamb are well started, but in case she refuses to own her lamb, we are indeed up against a proposition of the delicate order. This can sometimes be overcome by a little discipline, especially if the ewe is in a normal condition and has a good supply of milk. Various methods have been practiced to make ewes own their lambs and the first thing a man usually does is to try everything, hoping that he may hit upon the best method applicable to the particular case he is working with. I prefer to have the ewe and lamb in a small pen where I can hold her, and get the lamb to take its nourishment and after doing this a few times I often find that their family troubles are at an end. The greatest difficulty that I have found is that of getting a ewe that has lost her lamb to take a lamb from a ewe that has twins. This is often accomplished by tying the ewe in the pen and allowing the lamb to remain with her until she owns it. Some rub the skin of her dead lamb over the one they wish her to adopt or even remove the skin and put it on the adopted lamb. Personally, I have very little faith in such methods. However, they are worth trying when we have a fine lamb without a mother or a good suckling ewe without a lamb.

The lamb that is weak or unable to find the teat should have assistance and it is often necessary to discharge the first milk into its mouth. If the ewe fails to have an adequate supply of milk for her young they should be given cow's milk;

were kept close around the barns most of the time, thus getting but little exercise. A weak lamb is a great trouble at best and often dies, resulting in absolute loss. Too much exercise on scant food is objectionable, I know, but I also know that if we fail to exercise the ewe flock regularly, it will be our greatest cause for failure.

But exercise for the ewes can be overdone. Exercising does not mean running, chasing or frightening them. Exercising does not mean scaring them about the yard whenever you feed them or move among them. Exercising does not mean leaving the ewes in a barnyard where the pigs, colts and calves will run among them and scatter the flock in every direction. Nor does it mean turning them through lanes or over drives where they must jump and slide, thus running great risk of strain and abortion. No, indeed, for all these forms of exercise are dangerous in that they cause the ewes too much fright and quick jumping, running, and resulting strain. This forced exercise, being too violent, brings with it dangers; but it is not necessary to so hurt the ewes when they are exercised.

A convenient way of giving the flock a good kind of exercise is to slowly walk them to some adjacent field and there spread corn stover where they can eat among it. This is a mild manner of exercise, yet sufficient. When I have no corn stover I feed hay out on the ground. When the snow is deep I fill a large bag and either carry it or draw it on a light sled where I intend feeding. This is trouble, I realize, but much to be preferred to fussing with weak lambs or burying ewes which died from the resulting strain of abnormal parturition. The



A Healthy Flock of Breeding Ewes Getting their Daily Exercise.

that from a fresh cow being most adapted to their needs. The ewes that have feeble lambs should be given pens and yards by themselves, until the lambs have an opportunity to gain sufficient strength to hold their own in the flock. These feeble lambs often suffer seriously from the more vigorous lambs pirating at large upon their lambs. Lambs that form this habit should be placed with their dams, in a yard away from the other ewes. If a man has the right conveniences it will pay him to have his lambs come early and be in condition to make the best and most economical use of the tender pasture grass during its growing season, but if he has small barns and cold places for the ewes during the lambing period he had better breed his ewes to lamb after the weather becomes settled along in April and May. Lambs that come at this date and are well cared for will make better lambs in the fall than the ones that come early and get a poor start in life.

New York. W. MILTON KELLY.

EXERCISE FOR THE EWE FLOCK.

The ewes must be strong, well nourished and in the "pink" of physical condition at lambing time, if the best results are to be expected. In their native state, sheep took considerable exercise every day and, when we have them on the farm such exercise must also be given them. Good food, kind treatment and good blood are absolute essentials of successful flock husbandry, but unless we add simple, mind forms of exercise, the first will not bring success.

Every day, if it is possible, I walk my ewes out to the hill pasture where I feed them corn stover scattered on the ground. The walk is slow and quiet, the distance is long enough so that, before they return they have had considerable exercise and when my lambs come they will all be strong, healthy fellows. Last year this same flock gave too many poorly grown, weak lambs, principally because the ewes

idea of the feed is to give the sheep something to do while they are out on the fields, thus assuring yourself that they are not simply lying about, but exercising. The ewes may be made to walk to salt boxes set out in the field, but no method of which I know equals the simple method of spreading hay or corn stover for the ewes.

A. SHEPHERD.

THE CARE OF THE COLT'S FEET.

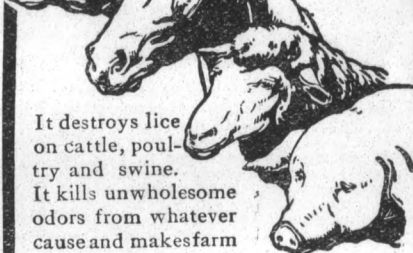
There is an old axiom that says no feet no horse, and when one begins to look into the matter the truth is at once apparent. To the person who is raising horses it is immensely important that they fill the demands of the ultimate user, and since this user of them wants especially good feet it is all important that we raise horses that have them. Among the horse trade it is a too well known fact that a great majority of the horses raised east of Illinois are deficient when it comes to their underpinning. The cause of this lies to a large degree, in the care we give our colts. Of course, heredity has a great deal to do with the making of the matured animal, but the environment and the care that a colt gets has its full share.

Old horsemen tell me that the foot of the eastern horse rarely has the size and, what is more, seldom has the tough, elastic texture of the western animal. The colt that is produced in the east central states has, as a rule, a somewhat brittle hoof that is easily broken as soon as it is put on the pavement. That is the reason for so many pavement-sore animals in our cities. Some of these men say that the cause for this lies in the fact that our soils are old and that the contact with them causes this trouble. But that seems a bit improbable, and so others say that it is due to the fact that we pamper our colts too much, keeping them inside too much during the winter months. They are of the opinion that their feet do not come in contact with the soil enough. Tying a young colt in a stable can do his

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keeps farm stock healthy. It stands, a guard against infectious animal diseases which sometimes sweep a community in epidemic form. You've no reason to dread hog cholera, infectious pneumonia, mange or other germ disease of live stock if you use Dr. Hess Dip and Disinfectant as a preventive.

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ten hours a day with ease
in any grass.

The floating frame and genuine under-draft found only in the Admiral, save the team all strength-sapping neck-weight and vibration and give a cutting-power which prevents any need of "hanging up" in thick grass. Send for our



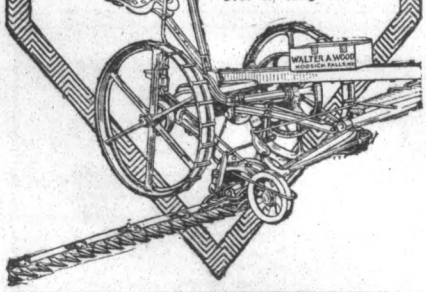
DIAMOND JUBILEE CATALOG

which explains the many features of the Admiral Mower that make it the "King of the Hay Field."

There are 95 illustrations in this big catalog, showing plainly every important feature and working part of all our machines. Every progressive farmer will be intensely interested in this book and should have a copy of it. Your copy will be sent as soon as you let us have your name and address on a postal. Send today.

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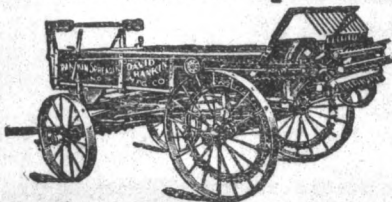
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feet no good. It is a far better plan to run the colts in a shed where they can have a chance to move around. Then do not forget to turn them out in a paddock every nice day, and allow a great deal of latitude in your choice of a day.

The second thing to keep in mind is to keep their feet well trimmed. A colt's foot grows very fast. When the feet get too long they are easily broken off, and do not always break where they need trimming. Then, if the foot is not trimmed at frequent intervals it will get too long and will throw a great deal of weight back on the tendons of the leg in such a way as to severely strain them, and in many cases permanently injure the animal.

The simplest way of trimming a colt's foot is to lead him on a scale platform or on the barn floor and go at it with a hammer and a sharp chisel.

Ohio.

CLYDE A. WAUGH.

MAKING BABY BEEF.

I have one pure-bred Shorthorn and some grade cows. I intend to milk these cows, separate the milk, sell the cream, and feed the skim-milk to the calves in connection with grain, all they will eat for 12 to 16 months, and sell for baby beef. I would like to ask what would be the best grains to feed the calves from start to finish. And do you think I have as much chance for success as I would have with a dairy breed of cows?

Shiawassee Co.

E. D.

In the writer's opinion, Mr. Dunn is on the right track toward the successful solution of the problem of beef production in Michigan. His idea is also in line with the economic methods recommended by our experiment station for beef production in Michigan, and demonstrated to be successful by experiments extending over a number of years. The idea has long prevailed among specialists in both lines, that dairying and beef production do not go well together, and that to reap the greatest profit from either branch of farming the one must be separated from the other and special purpose breeds of cattle kept with the one idea in view, be it the dairy or beef production. While there is reason in this position where one specialty is to be made paramount, yet it is certain that every farmer cannot be a specialist in dairying and keep only special purpose dairy cows, bred and selected for high production. In the first place, the cows are not available, and if they were there would soon be such an over-production of dairy products as to make the business unprofitable. The same reasoning holds in even greater degree in beef production. Feeder cattle of a good grade are becoming more scarce and relatively higher in proportion to the price for finished beef each year. The time is fast approaching if, indeed, it is not already at hand, when the Michigan beef producer must raise his own feeders if he would make any profit in beef production. To do this he must keep cows to produce the calves, and since it has been repeatedly demonstrated, both by experiment and practical experience, that the fat needed in the calf's ration can be supplied much more cheaply in an artificial manner than in the milk of the dam, economy dictates that the fat of the milk should be marketed in the form of cream or butter and the skim-milk, supplemented by suitable feeds, used in the growing of the calves.

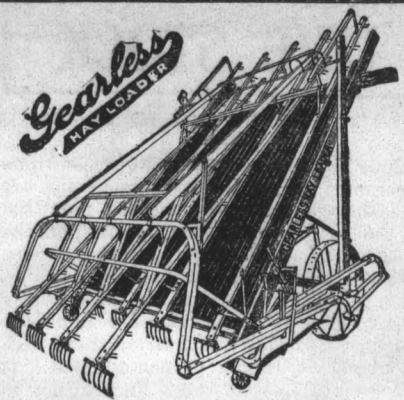
Where this course is to be followed, and we believe it to be the most profitable course for many farmers to follow, there can be no doubt about the wisdom of selecting general purpose cows for the herd, rather than individuals of the special purpose dairy breeds, since only by such selection of the parent stock can a profit be assured in the beef production end of the business. Nor is it at all certain that such a selection of cows will reduce the profit derived from the dairy end of the business to any great extent. Statistics are frequently quoted by dairymen when pleading for the more general use of the Babcock test and the scales as a means of weeding out the unprofitable cows, to prove that about one-third of the dairy cows in the country are maintained at an actual loss. While it is but fair to concede that few of these belong to the special purpose dairy breeds, yet some of them do and many of them are grades of those breeds. On the other hand, as is well known, there are many high producing individuals in the milking strains of some of the beef breeds, notably Shorthorns, while the average production at the pail is comparatively high in some of the dual purpose breeds, of which the Red Polls are a conspicuous example. Nor is there any lack of evidence of what can be done with a herd of pure-bred cattle of these breeds, and some others which might be

mentioned, in the way of profitable dairy production. Also, it has been demonstrated by our own experiment station that a profitable dairy can be conducted with a herd of ordinary cows such as can be picked up in almost any neighborhood, and at the same time raise a class of calves from them which will supply the foundation for equally profitable beef production. Why, then, is not this a profitable line of production for any farmer to pursue?

Of course, the best available cows should be secured for the purpose; cows which will yield a good profit at the pail and at the same time produce calves of the right conformation to develop into a good class of baby beef, and in the process of elimination which should be carried on in this line of production as in the special dairy, the scales and the Babcock test should be employed, but the capacity of the cow for producing calves of good feeding quality should be taken into consideration, thus making the problem a more complex one than it is with the dairy specialist. But, on the other hand, there is an advantage in the greater amount of material from which to choose and which can be secured for reasonable prices in the collection of such a herd. This is true for the reason that the farmers who have this class of cows do not generally keep a record of the production of their individual cows, and are thus as likely to sell their best as their poorest cow, while the dairyman who is up-to-date in his methods is more apt to know what he is doing along this line. Then, grade Shorthorns predominate in many sections of Michigan, and there are among them many good milkers that would make profitable dairy cows if properly fed for dairy production, and at the same time produce the best of calves for baby beef production.

The proper feeding of the calves, of course requires a considerable amount of knowledge and skill, if the greatest profit is to be made from the calves, just as considerable knowledge and skill is required in feeding the herd for a maximum profit in dairy production. At the start there is nothing better as a supplementary grain feed to be used with the skim-milk than ground flaxseed meal made into a jelly. About a gill of this should be fed with an amount of skim-milk which will supply the needed protein without causing digestive derangement. As the calf advances in age this may be gradually substituted with corn meal and ground oats from which the hulls have been sifted, and a combination of these feeds will prove satisfactory until the calf is weaned or requires a heavier grain ration than is required of these grains to balance the ration with the skim-milk fed. The gradual increase of the ration to supply the needs of the growing calf is a point in which the feeder must be guided by his own judgment, and it is essential that good judgment be used for the best results in the production of baby beef. When an additional grain ration is needed it should be well balanced, with about the same ratio of nutrients contained as is suitable for the dairy cows, at least until the fattening period arrives, since the growing calf requires a narrower ration for its best development than the feeding steer. The grains used may be largely those which are home-grown, such as corn and oats, with oil meal and bran as the best sources of protein for the young calves, although other concentrates may be used in connection with these for the purpose if desired.

Perhaps in this connection a word with regard to the amount which should be fed would be profitable. While care should be taken not to overfeed at any time, yet liberal feeding pays at all times, particularly after the calf is well started and the danger of digestive troubles is correspondingly lessened. The calf's appetite should never be fully satisfied, but the amount of feed given should come as near as possible to the point of satisfying it. The calf under a year old will consume more feed than is appreciated by the average farmer, and will make far more economical use of it than the older animal, so far as making cheap gains is concerned. To illustrate, the writer once fed a load of calves to finished baby beef, that reached the point where they consumed a grain ration aggregating 16 lbs. during the finishing process. Absolute cleanliness of feeding vessels is essential to success with calves, but if good judgment is used in their care and feed, substantial profits await the producer of baby beef that will top the market, and a reasonable profit can be made from the cows which produce the calves through the medium of the dairy.



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Dowagiac Drills & Seeders Are the Leaders

THERE ARE MANY REASONS WHY DOWAGIAC MANUFACTURING CO. DOWAGIAC, MICH.

DEVELOPING THE PURE-BRED CALF.

The value or the selling price of the pure-bred calf depends directly upon the appeal which his individuality makes upon the mind of the prospective purchaser. The problem of developing pure-bred calves is more often than is generally suspected, quite largely a problem in the study of the human nature of the men who may come to buy. Successful breeders are those whose animals appeal to the seeker for good cattle in such a way that such animals can be sold at a profit. The unsuccessful one is he whose calves or other animals are such as do not appeal to the buying public and which, as a consequence, cannot be sold at a profit. There are examples of both in every community. The class of successful breeders ought to be increased infinitely. The members of the other class, in many cases, might be able to change to the other by viewing the problem from a different angle and by looking at it as a simple business proposition.

Taking up some of the different points in consecutive order, the buyer wants, first of all, a pedigree. He has just reasons for this. It is pedigree that makes the difference between a pure-bred and a grade of equal individual merit. A pedigree to the buyer means that the animal in question has generations of pure blood back of him. Such being the case, the purchaser can form something of an idea as to the kind of a breeder the animal in question will be. The old saying that it takes a hundred years to produce a good man is equally true of cattle, and the buyer knows it.

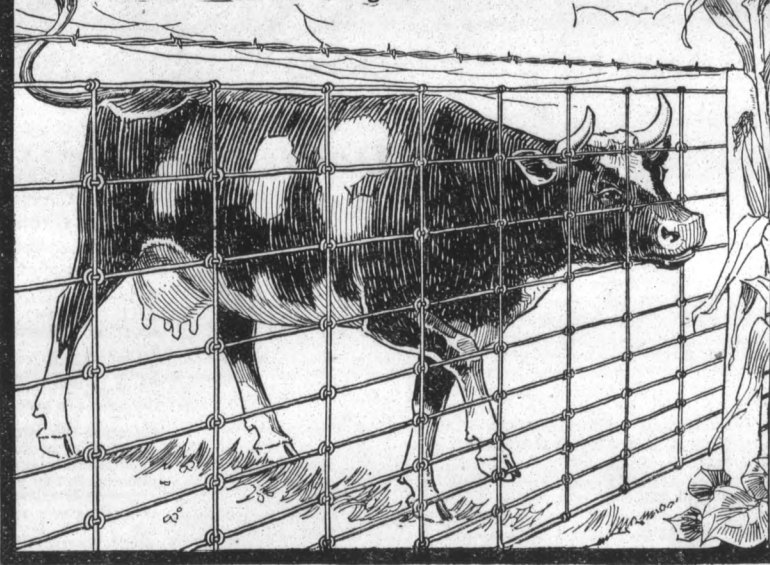
Next in consecutive order, and without which the best pedigree in the world is worthless, is individual merit. It is in this respect that the greatest work of development lies. It is with this that the breeder can do more than with any other in meeting the whims and fancies of of the purchaser. In this, ancestry counts for much. If the ancestors of the calf have been scrubs or of inferior type or quality, and if he has not in him the inherent elements of a good animal, the combined efforts of the half dozen best feeders in the world could not make him a profitable seller on the pure-bred market. On the other hand, if the calf has in him the inherent elements from his ancestry that are necessary to make a good animal, it lies within the feeder's power to make or mar the future of that calf.

Just as good feed has always been a factor in improving type and form, it is equally important in maintaining what has already been established. The feeding process properly begins before the calf is dropped. If the dam is properly fed on succulent, nourishing feeds in generous amounts the calf is more likely to come into the world in a thrifty, vigorous condition, that will enable him to develop and become a profitable individual. Buyers contradict themselves, seemingly, in one respect. They are constantly raising objections to animals that are in high condition of flesh. They say that high flesh is injurious to breeding qualities. True, high condition of fatness may be. Where these men contradict themselves is that, contrary to their own statements, they will not buy an animal unless it is fat. Take two bull calves, for example, of practically equal individual merit and breeding, and raised on the same farm. Let one of them be kept in a dark stall during the warm summer days; let him be fed liberally of the best grain mixtures the herdman can devise, and let him suckle two nurse cows morning and night. Let the other calf, practically his equal in the beginning, follow his dam in the pasture, fighting flies all day, suffering from exposure to the scorching summer sun and not eating generous allowances of grain, as did the other calf. Such difference in care are very common on neighboring farms and the writer has seen them on the same farm. In one such case the market value set upon two calves cared for by these opposing methods were \$400 for the well-fed one and \$150 for the other.

It is not the purpose here to maintain that the one calf may not have been injured by excessive pampering but rather to show the value in dollars that buyers actually place on condition. The buyer's attitude in this respect can be justified by several reasons. In the first place, he hopes to produce animals that will be good feeders and which will develop those fleshing qualities characteristic of good beef animals. How is he to know that the animal in question has those qualities unless he has seen him in a well-fed con-

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dition. Obviously, there is no other means by which he can determine. In the second place, it has been shown by experimental work that animals which are poorly fed actually grow narrower and off type. Hence, unless the calf has been well cared for he will not be of the desired form and type. However, this latter fact is probably more important with the feeder than with the buyer at time of sale.

Under development may properly be included everything essential in the management up to the time of sale. Pure-bred calves need to be broken to lead. This is very essential, whether the calf is to be sold at the farm, whether he is to be sold at auction, or whether he is to go into the show ring. Breaking to lead may be done while he is quite young, in fact, the earlier it is done the better it will be. Then the bulls need to have rings put into their noses as soon as they become the least bit unmanageable in the halter. This can be easily done and it will detract from the calf's value in the mind of the buyer if it is not done.

Judicious advertising is necessary to interest the buyers. Just what the advertising should be varies with each case. Advertising should be done with the definite purpose of interesting and informing the prospective buyer. If this is done the value, or, rather, the selling price, is actually increased. A reputation for honesty and for being a successful stockman is one of the best forms of advertisement that a breeder can give his herd. This will come about by square dealing in all things at all times with all men and by the production of animals that are of such merit that their owner will be recognized as a master in the business of cattle breeding.

Iowa.

H. E. MCCARTNEY.

VENTILATION OF THE HOG HOUSE.

I have 12 shoats that have been doing finely, but lately they sweat in the nest and when they come out to feed they seem to get chilled and will not eat as they ought. I am feeding the ground barley twice a day.

Genesee Co.

M. J. M.

The trouble in this case is undoubtedly due to poor ventilation of the hog house or too close confinement of the hogs to the house, or both. The hog house should be comfortably warm, that is, there should be no cold draughts in it, and it should be tight enough to insure the maintenance of a temperature higher than the outside air in very cold weather. But in addition to this it should be dry, and the nests should be large enough to provide room for the hogs kept in it to lie down without crowding and piling up, which will cause the trouble mentioned in this inquiry. To accomplish this result there must be some provision for the introduction of fresh air into the hog house and for the escape of the foul air. The writer has seen a number of farmers attempt to increase their profit from the hogs by building expensive hog houses, and fail simply because no adequate provision was made for good ventilation. One case in particular comes to mind at this time, in which a hog house was made with a covering of two thicknesses of lumber, with building paper between them to insure warmth. But no provision was made for ventilation and the steam would condense on the roof, which was of iron, and drop down to the floor. The King system of ventilation is undoubtedly the best for the hog house as for other stables, and its installation will cost but little, but where this is not provided, a door should be left open at some point where the wind will not blow in on the hogs, and a window opened a little for the introduction of fresh air, which will provide for a free circulation of air through the building. There is nothing in the feed that the pigs are getting which should produce such an effect, and the trouble is undoubtedly with other essentials of their care.

LIVE STOCK NOTES.

There are many inquiries from stockmen all over the country asking why stags when sold in the open market are subjected to a dockage of 80 lbs. per head. This practice began many years ago, the packers refusing to buy stags except in this manner, and in later years the plan was adopted by the Chicago Live Stock Exchange and other live stock exchanges of the country, so that the rule is a binding one. Formerly stags were not so highly regarded as they are these times, when everything in the hog line, boars alone excepted, are valuable property, and the dockage scheme was the means of quite a saving in the money expended for hogs by the packers. Of late, however, sellers of stags have been placed in a

much more independent position, and stags are sold at an extremely large premium over the prices paid for first-class barrows, this fully offsetting and being intended to do so, the dockage. Stags are largely used for the manufacture of various kinds of sausages and are having a large demand.

While the pigs of last spring are rapidly maturing and becoming full-grown hogs, their owners are placing a high valuation on them, knowing so well the shortage in the hog supply everywhere, and marketings are sure to fall off materially whenever there is a sharp break in prices. There has been all along a powerful incentive for stockmen to make their holdings good and fat, as corn has been abundant and very cheap, while hogs have commanded unusually high prices. Farmers have figured it out that forty-cent corn could be converted into eighty-cent corn by simply feeding to thrifty, growing young hogs, and this accounts for the unusually heavy average weights of hogs coming to western markets. The packers have been buying the heavy hogs at a great discount in prices and are fighting to keep values down now in order to be enabled to stock up freely with cheaper pork and other lines of provisions. It has been argued in some quarters that the forcing of heavy weight hogs to a big discount under light weights will go far towards loosening up the movement from feeding districts, as farmers will find that they can get as much money for 200-lb. hogs and their corn as for 300-lb. hogs. Reports from farming sections state that there is the biggest kind of a demand for stock hogs, and farmers have been paying 8@11 cents a pound, while some sales are reported as high as 12c.

The Chicago horse market is receiving a good many blemished, aged or worn-out horses that have to be disposed of at \$85 to \$100 per head. The market is very unsatisfactory for the poorer animals and is apt to be overstocked.

The tendency in the cattle market is still for the cheaper and middling descriptions to sell relatively better than the choicer lots, while feeders sell dangerously near prices paid for fat beefs. There is too much speculation involved in buying stockers and feeders at these fancy figures.

A prominent Chicago live stock commission firm, with branches at all of the principal markets of the country, has had many inquiries in regard to buying cattle in half-fat condition for a quick turn in the feed lot. In their opinion the best time to take hold will be late in February or the first half of March. Thus will the cattle escape the rough and stormy weather of January and early days of February. The cattle can be fed 60 or 75 days, by which time the market should be in good condition, barring unforeseen adverse conditions. If it is not advisable to market the cattle at that time, they could be turned on grass and given a feed of corn once a day and marketed in July, August or the first half of September.

J. A. Delfelder, the big flockmaster of Wyoming, says that December and January were exceptionally favorable months for western sheepmen, showing a complete contrast to the great severity of the preceding winter, when the severe weather resulted in great losses of sheep and lambs. At that time the cold was so intense that sheep would not breed, and out of a total of approximately five million breeding ewes then in the state, a lamb "crop" of one million head was produced. The long drought of the summer of 1910 followed, and now the Wyoming flockmasters have not more than 50 per cent of their usual holdings, the same being true of Montana. The range sheep industry has seen its best days, and forest regulations are growing all the time more stringent, while the dry farmer is crowding the big ranches from the map. Old ewes and wethers were mostly marketed last year, and full 90 per cent of the lamb "crop" was sold. Mr. Delfelder adds: "There are not today 50,000 head of last year's lamb crop left in the state of Wyoming. Next season's supply of range stock that will show up at market centers will of necessity be small, and will consist almost exclusively of lambs. The number of them to come cannot now, of course, be estimated. We should have a good lambing season, but unless dry weather forces the crop marketward, owners will not be anxious to part with a very liberal per cent of their holdings."

W. A. Parrish, of Indiana, who has been breeding and feeding "baby beef" for the past eight years, has been highly successful, having topped the market with his shipments most of that period. He sold a shipment of pure-bred Hereford steers and heifers that averaged 1,034 lbs. at Chicago for \$7 per 100 lbs. not long since, and expressed himself as perfectly satisfied with his experience. He believes that as long as one can get from \$60 to \$70 per head for yearlings, it does not pay to hold cattle for older beef age. He says he has always found that "baby beef" pays well, even though he breeds and matures his cattle on land that is worth \$150 an acre. His recent cattle shipment showed the best of care. They had plenty of grass until nearly a year old, with a ration of shelled corn and fodder to keep them growing well. Then the ration was changed to shelled corn and oats for 30 days, then new corn substituted. They were finished on shelled corn, oil meal and clover hay, and at no time were the cattle allowed to lose the calf flesh, something that Mr. Parrish regards as one of the most important factors in maturing young beef.

B. W. Snow estimates the number of hogs in the United States on Jan. 1 at 49,215,000 head, or 1,333,000 more than the government estimate of a year ago, 4,932,000 less than two years ago and 8,302,000 less than three years ago. These comparisons show the great need of materially increasing breeding operations throughout the country.



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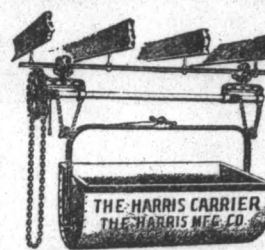
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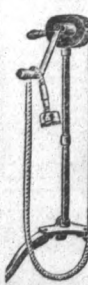
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VETERINARY

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

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

Roup.—I have a disease among my hens which I would like to know how to treat. Their eyes inflame, pus gathers in the eye, causing loss of vision, they also seem to have sore throat and discharge at the nose. J. F. M., Brown City, Mich.—Roup is caused by a micro-organism and of course is a highly contagious disease and one that is quite destructive to poultry. When this contagious disease exists in a small flock of chickens that are of little value it is often good business judgment to kill and burn every one of the fowls. All things considered, it is the least expensive way out of the trouble. The healthy fowls should be moved away from the diseased and the diseased ones given a dessertspoonful of castor oil and repeat in 12 hours if it does not act. Put a teaspoonful of carbolic acid and a table-spoonful of glycerine in a pint of water and syringe a small quantity into the slit in the roof of the mouth twice a day. Also put some finely powdered boric acid into eyes twice a day. If you do not disinfect and clean your poultry house thoroughly you had better not put well chickens in it for four or five months, but it will pay you to spend some time cleaning and disinfecting your poultry house.

H. C. T., Walkerville, Mich.—Treat your cows for infectious abortion. Readers of this paper should not expect lengthy answers to their questions when they have been recently answered for others. We need the space for other purposes.

Torpid Kidneys.—My brood mare is due to foal April 9, and although she is not sick there is quite a swelling under abdomen, which I would like to know about. O. C. O., Baraga, Mich.—Many brood mares in the latter period of pregnancy are troubled with a dropsical effusion underneath abdomen which seldom does much harm. However, it is well enough to keep their kidneys moderately active. Give a dessertspoonful of nitrate of potash daily for a few days then a dose when you believe it is required.

Rickets—Rheumatism.—I have four pigs four months old that are crippled and weak in their legs, and when walking sometimes fall, and I would like to know what ails them. G. G., Remus, Mich.—Put a dessertspoonful of air slaked lime in their feed two or three times a day. Discontinue feeding corn, but feed oats some oil meal and roots. Apply one part turpentine, one part aqua ammonia and three parts olive oil to their back once a day for a few days. If their bowels are costive give two tablespoonfuls of castor oil at a dose daily until the desired effect is produced.

Indigestion—Colic.—Seven years ago I bought a mare; she was then eight years old; for three years she had no sick spells; since then she has had frequent attacks of colic. She is now in foal and has raised a colt every year for the past three years. O. T., Ithaca, Mich.—Your mare should be fed a good quality of food, sheltered from storms, exercised every day, her bowels kept moderately open and give her a teaspoonful of salt, a table-spoonful of gentian and two table-spoonfuls of ground ginger at a dose in feed two or three times a day. She no doubt suffers from indigestion, preceding the colic pains and when in distress give her 1 oz. doses of wine of opium, ½ oz. fluid extract ginger and 1 oz. aromatic spirits of ammonia in a quart of water as a drench. Repeat these doses every hour until pain ceases.

Brood Mare Fails to Make Bag—Dropsy—Ringworm.—My mare is due to foal on March 11; she has not yet made bag, but is swollen considerably on lower part of abdomen. I also have a yearling bull that has white scaly patches on neck and I would like to know how to cure him. F. H., Freeland, Mich.—Feed your mare more nourishing food and she will doubtless make her bag. Give her a table-spoonful of powdered rosin and a table-spoonful of powdered buchu leaves at a dose in feed two or three times a day, but do not apply irritating liniment to swelling—hand-rubbing is much better; however, this swelling will go down after she foals. She should have some exercise every day and I suggest that you feed her some well-salted bran mash or roots to keep her bowels open. Apply one part iodine and 10 parts vaseline to scaly bunches on bull every day or two.

Sore Neck—Colic—Obstructed Teat.—Have a horse that was troubled with a sore neck last summer, the wounds healed but skin is rough, wrinkled and scaly. I also have another horse that has attacks of colic. One of my cows has an obstruction in end of teat which makes it impossible to milk her without the aid of a milking tube. A. C. V., Mt. Pleasant, Mich.—Apply one part vinegar and two parts water to sore neck twice a day; this will remove the hard scales. See treatment for colic in this column. Open stricture with a sharp, narrow knife and continue using milking tube or a tapering steel sound; this is done to dilate teat opening. If you have a teat plug let her wear one.

Unhealthy Hoof.—My 14-year-old horse cut foot on barbed wire, now a barbed hoof is growing on; what will hasten its growth?

W. T. Sterling, Mich.—Apply lanolin (wool fat) and keep the foot moist, at the same time keep the horse in a healthy condition.

Fractured Hip—Injured Stifle.—My 15-year-old mare has poor use of one hind leg and the trouble must either be in hip or stifle. She finds it difficult to get up alone. W. B. S., Edwardsburg, Mich.—Apply equal parts turpentine, aqua ammonia and olive oil to hip and stifle every day or two. She may suffer from a simple fracture of hip or pelvis or she may have sprained her stifle. It might be good practice to place her in slings for a few weeks.

Strangles—Open Parotid Duct.—My 4-year-old colt has had distemper for the past four weeks, several abscesses have formed in throat which I have opened, a stringy discharge comes from one of the openings I made in throat only when he eats; his legs are stocked, he has a dropsical swelling under belly and his appetite is poor. S. L., Caro, Mich.—You made a mistake and opened duct that carries saliva from parotid gland of throat to mouth and you will find it very difficult to close it. The duct should be stitched closely with very fine catgut or silkworm thread and allowed to remain in; also apply equal parts boric acid, powdered alum and oxide of zinc to sore twice a day. Give horse 30 grs. of quinine, 1 dr. fluid extract nuxvomica and 1 oz. fluid extract of gentian at a dose three times a day. The swelling in legs and abdomen will gradually leave when your colt commences to gain strength.

Chronic Navicular Disease.—My five-year-old mare is very sore in both front feet, but improves some when exercised, much worse some days than others. She has been treated by two different Vets. with poor success. J. L. P., Conklin, Mich.—Chronic navicular lameness is considered incurable, therefore the most humane thing to do is to have a section of the nerve on each side of both fore legs removed; this will relieve her pain, make her comfortable and put her in condition to comfortably work. Kindly understand the feet should be watched for fear of snags or nail pricks or other injuries to foot, for the operation cuts off sensation and feeling from the foot.

Azoturia.—My horse stood in the stable Sunday, Monday and Tuesday and was fed as usual; shortly after he left the barn on Wednesday morning to work he lost the use of his hind quarters. We hauled him home in a sleigh, took good care of him and now have him in slings. What ailed him? A. S., Gould City, Mich.—Generous feeding of grain, foul stable air and want of daily exercise is the most common cause of this ailment. The veterinary profession have thus far failed to discover any certain reliable remedy for azoturia; however, fairly good results follow keeping the animal warm, quiet, in an upright position, the bowels should be opened by means of laxatives such as aloes or raw linseed oil. Active kidney stimulants should be avoided. If the animal is feverish give aconite every two or three hours, also give ½ oz. doses of bromide of potash every four hours and 3 oz. doses of bicarbonate of soda every three or four hours. Also give 1 oz. doses of fluid extract of buchu three or four times a day to stimulate the kidneys into action. Let the horse drink plenty of tepid water, keep the loins warm and apply camphorated liniment and when the proper time comes place the animal in slings. This is a dietetic disease and can be avoided by feeding idle, fleshy work horses only one-quarter as much grain when they are idle as if working; besides, all fleshy work horses should be exercised some every day. There are many other remedies that have given me equally as good results as those I mentioned.

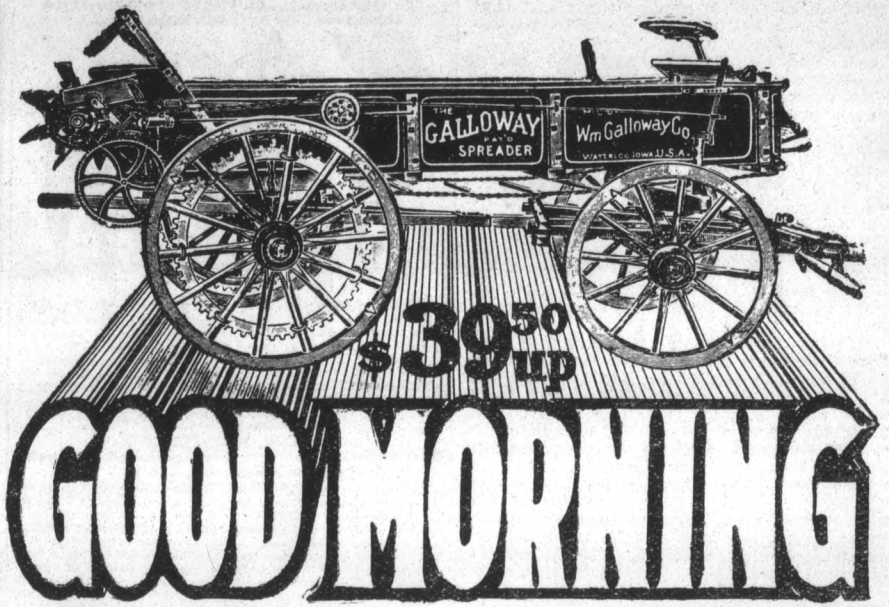
Nasal Gleet—Diseased Molar Teeth.—My 12-year-old mare has had a discharge from both nostrils for the past two years. The discharge has a very offensive odor. F. J. B., Chicago, Ill.—You may have a case of nasal gleet, the result of neglected catarrh or it may be the result of diseased upper molar teeth. I suggest that you have her examined by a competent Vet. He may decide to use the mallein test to ascertain if she has glanders; however, I am inclined to believe that she may have diseased teeth.

Chronic Founder.—Have a mare that our local Vet. treated for founder last fall, but she still travels sore and perspires freely when used. She has rested all winter with shoes off. W. J. C., Ypsilanti, Mich.—Clip hair of coronets in front and apply cerate of cantharides once a week; this will stimulate growth of horn and when you shoe her use wide-webbed shoes with rolling motion. By standing her in wet clay three inches deep it will assist in removing soreness.

Thick Urine.—My two-year-old colt seems to be thriving, shedding nicely, but her urine is too thick. C. A. B., Blanchard, Mich.—Give your colt a dessertspoonful of fluid extract of buchu twice a day and a teaspoonful of citrate of potash at a dose once a day for a week or ten days.

Ringbone.—Have a three-year-old colt with enlarged pasterns which cause no lameness. One of the bunches seems to be growing; what had I better do? S. J., Norville, Mich.—Apply one part red iodide of mercury and six parts lard to growing bunch once a week. Give the colt rest.

Obstructed Salivary Duct.—Since last June my six-year-old mare has had a lump on side of her jaw, caused by the plugging of salivary duct. At times it is quite large, at others it is much smaller. There appears to be some pain in it. F. L. H., Union City, Mich.—There may be a salivary calculi in the duct, (Steno's duct), and if so it may be necessary to open it and remove the calculi, then bring the edges together closely with catgut stitches, then cover the parts closely with liquid colodion several thicknesses; this is work that should be done by a com-



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petent veterinarian, or else the gland that secretes the saliva may have to be destroyed.

Use Impregnator.—I have two mares that have been bred several times but seem to fail in getting with foal. These mares are seemingly in perfect health. E. A. F., Grand Haven, Mich.—You had better use an impregnator, but I do not approve of breeding mares at this season of the year and having them foal in the winter.

Lack of Appetite.—I recently bought a calf that was shipped here from Ohio, but he does not drink enough milk for a four-week-old calf. H. E., Montague, Mich.—Give your calf a teaspoonful of fluid extract gentian at a dose in milk three times a day.

Rheumatism.—Have a Berkshire boar that first went lame in left hind leg; now he is affected in all four quarters; he first showed lameness last fall and has never been right since. His food supply has been corn and slops from the house. F. S., Fowlerville, Mich.—I am inclined to believe that you have fed your hog too much corn and kitchen slop which contained soap. Give him a teaspoonful of air slaked lime, ground oats, some oil meal and middlings. Also give 15 grs. salicylate of soda and 1-20 of a grain of strychnine at a dose in feed three times a day. Keep him dry and warm and his bowels fairly active.

Partial Loss of Power.—Feeding an Unbalanced Ration.—I have a hog that has been down for some time and does not use his hind quarters. His appetite is good and I feed him corn and other slop. Would you advise in building a hog-pen, to make the floor cement? A. J. H., Hart, Mich.—Your hog has not been fed a balanced ration or perhaps his back may have been injured. If he is fleshy, butcher him, for it is doubtful if he will ever regain the proper use of his hind legs. A wood or cement floor for at least a portion or all of your hog-pen is right. I find too few people who are inclined to keep their hog-pen clean enough and the hogs are allowed to live in too much filth.

Diarrhoea.—My turkey gobbler is troubled with looseness of the bowels and has a poor appetite. C. G., Saline, Mich.—Give your turkey one drop beechwood creosote, one drop oil of cinnamon and three drops spirits of camphor at a dose two or three times a day. His food should be well cooked and his drinking water boiled.

Poison.—Nux Vomica.—Indigestion.—Will it be safe to give a horse 1 dr. of ground nux vomica at a dose once a day for two days? The horse weighed 1,000 lbs., was given only two doses, 24 hours apart, and I would like to know if such doses might prove fatal. I also have a cow that seems to have run down; she improved while I gave her nux vomica, but fails to get with calf. D. W. H., Muskegon, Mich.—The dose of ground nux vomica is from 1/2 dr. to 2 drs. However, I seldom give more than 1 1/2 drs. at a dose three times a day. Your horse died the result of other causes. Giving nux vomica stimulates the sexual organs and exalts all the functions of the spinal cord and is a nice nerve tonic.

Chronic Foot Soreness.—Reading the Michigan Farmer has helped me a whole lot and I have been treating my live stock with prescriptions from the veterinary column. Eight years ago I bought a horse that was quite sore in fore quarters and when starting is very stiff and sore, but improves after he travels a short distance. When turning, his fore feet are well out in front of him. G. P. C., Grass Lake, Mich.—I am inclined to believe it is a case of either chronic founder or navicular disease and is perhaps incurable. Fairly good results will follow blistering coronets in front with cerate of cantharides every 10 days and softening hoofs with wool fat.

Sore Eyes.—Bog Spavin.—For several weeks my mare has been troubled with sore eyes, the eye ball is clean and clear but the corners of the eyes are somewhat inflamed. I would like to know what to apply, for simple remedies fail to do any good. I also have a horse that has a small bog spavin and you may tell me how to treat him. J. S., Cheboygan, Mich. Blow some calomel into eyes once daily. Apply cerate of cantharides to hock once every ten days.

Mare a Deep Milker.—My ten-year-old mare is due to foal April 15, and the milk runs from her daily; have discontinued feeding bran and carrots and am feeding hay and oats. Do you believe she will drop colt too soon? She seems to be in perfect health. J. R. W., Ionia, Mich.—Give her either light work or daily walking exercise and not overfeed her on timothy hay and oats. She needs no drugs. Will very likely raise a good colt for you.

Cough—Acidity of Stomach.—I have a five-year-old horse that coughs some when eating and all the home remedies I have given him fail to effect a cure. Will it do him harm to be driven or worked lightly? Some of my cows are inclined to eat stable manure and I am afraid it may affect their milk. How can I prevent the cows from eating the horse manure? C. G. F., New Boston, Mich.—Give 1/2 dr. of powdered opium, 1 dr. iodide of potassium and 1/2 oz. powdered licorice at a dose in feed three times a day. Give each cow two tablespoonfuls powdered charcoal, a tablespoonful of ground gentian and a tablespoonful of cooking soda at a dose in feed three times a day. Sprinkle manure with one part coal-tar disinfectant and 100 parts water and your cows will not eat it.

Barren Sow.—I have a two-year-old brood sow that I bought last fall which has been served twice lately, by a boar that is sure and she fails to get with pig. She will soon be in heat again and I wish you would tell me what to do for her. W. C. M., Breckenridge, Mich.—Dissolve 1 oz. of bicarbonate of soda in a pint of clean, tepid water and wash out vagina daily for 15 or 20 days. This treatment will perhaps put her in condition to breed.



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THE double standard Polled Durham, Wild eyed Abotts burn. Milk strain, Grand Champion silver cup winner at 1910 Michigan State Fair. JAS. H. HALL, Port Austin, Michigan.

FOR SALE—One of the best bred, registered Holstein bulls in Michigan, pounds of butter per week. Can be purchased at a right price. Individually as fine as pedigree. About fourteen months old. Write R. R. McFall, Adrian, Mich.

Holsteins—Young bulls of high quality and low prices, considering breeding. Get our descriptions. LONG BEACH FARM, Augusta, Mich.

TOP NOTCH HOLSTEINS

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

McPHERSON FARMS CO., Howell, Mich.

25 Holstein Cows For Sale—10 good young cows, bred to a son of Pieterje Hengervelds Count De Kol, due to freshen in Feb., & Mar. 15 others bred to equally as good bulls. 10 bull calves, mostly from A. R. O. Dams. 1 yearling bull sired, Admiral Prilly Walker, Dam, a daughter of Manor De Kol. This is good stuff, if you want some of it, write me just what you want. L. E. Connell, Fayette, Ohio.

For Sale—Choicely bred registered Holstein Bulls ready for service, also younger ones. Farm near White, Mich. out of Detroit on Wabash. Write, WILLIAM B. HATCH, Seabreeze, Florida.

DE KOL Korndyke Bull Calf—Choicest A. R. O. breeding. Splendid individual, mostly white, \$75. COLE BROTHERS, Ypsilanti Farms, Ypsilanti, Mich.

Holstein Friesian Cattle also a fine bunch of Plymouth Rock Cockerels. W. B. JONES, Oak Grove, Michigan.

FOR SALE—Holstein Bull 2 years old \$125. Bull Calves 6 months to 1 year \$50 to \$100. Bred heifers \$150 to \$200. Oldest herd in Ind. Send for Photos and Pedigrees. W. C. JACKSON, 715 Rex St. South Bend, Ind.

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

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

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

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Jersey Cows for sale, large, rich milk producers, registered stock. W. J. BROWNE, Mulliken, Mich.

For Sale—Registered Jersey Cattle, either sex, also Reg. O. I. C. hogs. C. A. BRISTOL, Fenton, Mich.

Jersey Bull Calf born April 10, 1910. Dam will go in Registry of Merit this year, gave \$224 lbs. milk as 2-yr-old. Sires Dam's record 1000 lbs. milk in 10 1/2 months. THE MURRAY-WATERMAN CO., R. 6, Ann Arbor, Mich. Bell Phone.

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SHORTHORNS and POLLED DURHAMS. Both sexes A. D. DeGARMO, Highland, Michigan.

Scotch Shorthorns—3 young Bulls and a few cows and heifers for sale JOHN LESSITER'S SONS, R. No. 1, Clarkston, Mich.

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Hampshire—Ewes bred for March & April; registered stock; Choice individuals. O. D. WOODBURY, Lansing, Michigan.

Oxford-Down Sheep and Polled cattle for sale. J. A. De GARMO, Muir, Mich.

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INGLESIDE SHROPSHIRE—Rams of all ages. Bred ewes, singly or in lots. H. E. POWELL, Robt. Groves, Shepherd, Ionia, Mich.

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

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BERKSHIRES Unexcelled in breeding. Select. fall pigs. T. V. HICKS, R. No. 11, Battle Creek, Mich.

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DUROC-JERSEY SWINE and HOLSTEIN FRIESIAN CATTLE. One boar and one sow yet for sale. E. R. CORNELL, Howell, Michigan.

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O. I. C.—Choice Bred Sows. Boars ready for service. Glenwood Stock Farm, Zeeland, Michigan. Phone 94.

O. I. C.—Bred sows all sold, 1 June boar left. A few fall pigs either sex. Satisfaction guaranteed. A. NEWMAN, R. 1, Mariette, Michigan.

12 P. C. Boars ready for service, sired by a Son of the World's Champion Meddler; dam, undefeated Lady Louise. Z. Kinne, Three Oaks, Mich.

POLAND-CHINAS—Large styled Gilts and older sows bred. Boars ready for use, also fall Pigs. Prices low. ROBERT NEVE, Pierson, Michigan.

POLAND-CHINAS—Fall pigs either sex. Young sows, spring farrow. Write L. W. Barnes & Son, Byron, Shiawassee Co., Mich.

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POLAND CHINAS—Sows of big type. Gilts bred for spring. A few choice boars and fall pigs. E. D. BISHOP, Route 38, Lake Odessa, Michigan.

LARGE TYPE P. C.—Largest in Michigan. Sept. pigs weigh from 175 to 185 lbs.—the herd without an equal, combining size and quality. W. E. LIVINGSTON, Parma, Mich.

LILLIE FARMSTEAD YORKSHIRES. The great medium bacon type. The hog that wins on sheer merit. Large, vigorous, prolific. Gilts bred for March or April farrow. Fall pigs, either sex. Pairs not akin. I guarantee satisfaction, or money refunded. COLON C. LILLIE, Coopersville, Mich.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

HANDLING COWS BEFORE AND AFTER CALVING.

The correct management of cows shortly before and after calving is a matter of no small importance in securing the best results from a dairy herd. As a rule it is desirable to have cows dried off about a month before calving. This will give them needed rest as well as opportunity to properly nourish their foetus and build up their own body.

Unfortunately, too, many of our cows are still of the kind that take too much rest, some scarcely milking more than seven months of the year. On the other hand, among the higher producers there are many whose persistency to give milk is such that unless special means are used to check the milk flow, they will fail to go dry at all.

A reduction in the allowance of feed is an effectual means of hastening the drying off but care must be taken not to reduce the feed supply too low because, as has been stated, cows at this time require a good deal of nourishment for the foetus as well as for building up their own body, which is apt to be pretty well run down. When it is desirable to hasten the drying off, the following method will be found effective: Start drying off by not milking the cow clean this will quickly reduce the flow to a point where it will be safe to skip every other milking. After milking only once a day for several days or, perhaps, a week, the milk will usually be sufficiently reduced to warrant milking only once every two days. This need not be continued long before it will be safe to stop milking altogether.

In case of very persistent milkers, it is better to milk them close up to, if not up to, calving rather than force the drying off process too much.

Many cows shortly before calving will show enormous udder development accompanied by more or less hardness, and the question is often asked, "is it best to milk such cows before calving?" Only in rare cases is it advisable to do this. It is best for the cow and for the calf to come, as well as for the subsequent milk flow, not to milk cows before calving.

When the cow's bag becomes unduly distended, it is frequently seen that she leaks her milk. The formation of milk in such instances is due, as a rule, to the manipulation of the udder, with the hind legs in moving about. The remedy is to keep the cow as quiet as possible.

Nearly a week before the cow is due to calve, she should be separated from the rest of the herd and placed in comfortable quarters, large enough to enable the cow to move about. Unfortunately, the majority of dairymen do not know when their cows are due to calve because they keep no breeding records. Where the date of service is not known, it frequently happens that cows are obliged to calve in their stalls. Such unfortunate occurrences should be prevented.

The cow's bowels should be kept reasonably loose by feeding such laxative feeds as linseed meal, corn silage or roots. When no pasture is available feed a ration consisting of corn silage, good hay and two to four pounds of grain. A mixture of linseed meal, wheat bran and ground oats makes a very desirable grain ration to feed shortly before and after calving. The grain should not be increased until about the fourth day after calving and then only gradually. Where there is any danger of milk fever the cow should be fed very lightly until all danger is past. The tendency to milk fever is lessened also by not milking the cow clean for about three days after calving. Remove the calf from the cow when about 24 hours old. The early removal of the calf makes it easier to teach it to drink from a pail and prevents the excitement attendant on separating an older calf from its mother.

It is well to be at hand when the cow sheds her afterbirth. If not promptly removed from her quarters, she is likely to eat it, with harmful consequences. It is well to remember that very cold water has a tendency to retain the afterbirth and is otherwise injurious to the cow just before and after calving. Keeping the bowels loose also helps to shed the afterbirth.

In case the cow's udder is hard and swollen after calving, feed lightly, using laxative feeds; milk frequently; bathe the udder with hot water or, apply hot bran

mash; and thoroughly rub with lard or raw linseed oil, keeping up the rubbing and kneading five minutes or longer at a time. With such udders it is an advantage to allow the calf to suck the cow until relief comes.

When a cow is in normal condition the milk from her is fit for the table the fourth day after calving. In case of a bad udder or failure to clean properly the milk should not be used so soon.

Whenever an abortion occurs, apparently without cause, it should be treated as contagious and requires the immediate quarantining of the cow, the prompt burial of the calf and thorough disinfection of the contaminated quarters. Such cows should not be bred so long as any discharge is noticeable. Even then the bull must be thoroughly disinfected after breeding, to prevent his infecting other cows. Aborting cows must be kept away from the herd until they have dropped a full-grown calf. Unless such cows are especially valuable they had better be disposed of at once to the butcher.

One thing that has materially lessened many a cow owner's anxiety is the easy and very effective remedy available now for milk fever, namely, the air treatment. Every dairymen should possess a milk fever outfit so as to be prepared to meet emergencies promptly.

Wisconsin.

JOHN MICHELS.

ARRANGEMENT AND VENTILATION OF BARN.

The writer started to build a basement barn this fall, 36x56 ft. Sets east and west. My plan is to divide this in three parts, 12 feet on each side for stables and 12 feet feed alley in the center, have a well in one corner where I want to have a room for the separator. I have two large windows on each side and two in the west end and two in the east end. The height of the walls will be 7 ft. 8 in. and constructed of cement. It will be 12 inches on the bottom, tapered to 10 inches on top. Will have tile laid around outside of wall. Is the gutter considered the best way to take care of the manure or would it do to slant the floor toward a drain? Which would be the best where you want to wheel the manure out? What I am puzzled most over is, to know how to ventilate the stables. Will the hay chutes answer for that purpose? E. J.

As I have explained many times in the Michigan Farmer, I think E. J. is making a mistake when he divides the basement of his barn crosswise into three separate stables. Of course, he can have good, comfortable stables for his cattle but it will cost considerable more to take care of this barn than it would if he built a driveway through the center of it, the long way, and have his stalls on either side so that he can drive through the barn and clean out the stables. However, this is a matter for him to settle himself.

I know of no better way to take care of the manure in the stable than to have a gutter. This, of course, forms a receptacle for the liquid manure which allows a place for it to accumulate so that it will not make the barn dirty and soil the animals.

This barn can be ventilated by the King system, which I consider the only scientific way of ventilating a barn at the present time. There is some talk about the ventilation of a barn by the theory of cheesecloth over the windows, and many who have tried it claim that it works well, but my opinion of it would be that this would be a mere makeshift for ventilation. If a barn is well constructed so that it is tight, so that the currents of air can be controlled, it can be ventilated perfectly by the King system, which consists of having a ventilating shaft opening near the bottom, running through the stable up through the storage part of the barn and out of the roof, the higher above the roof, the better, because the taller it is the better it will draw. It is really a chimney. Then, around the outside of the stable, up next to the ceiling, have openings pass through to the out-of-doors but instead of opening directly out-of-doors have these openings boxed in with the box extending down to within a foot or two of the ground. This allows the pure outdoor air to come up through this box and pass through the opening into the barn while it prevents the warm, pure air up near the ceiling from going out, because it would have to go down through a column of cold air. This pure air coming in at the ceiling mixes with the warm air up next to the ceiling and forces a circulation and compels the cold, impure air in the lower surface of the room to pass to the ventilating shaft and up out doors. Furnishing a circulation of air is all there is to ventilation, and retaining the warm air in the stable and drawing off the cold and impure air at the bottom, which preserves the temperature of the stable.

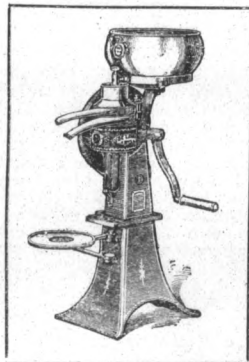
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CLOVER HAY WITH RYE FOR FEED.

Give balanced ration for dairy cows with clover hay and cornstalks for roughage. I want to use rye that is about one-fourth chess for bulk of grain.

Allegan Co. A. K.
Rye is quite sufficient in protein to balance up a ration with clover hay and corn-stalks for roughage. It has about the same amount of protein as corn meal, consequently you want some other grain in the ration which is rich in protein. I would advise both oil meal and cottonseed meal. Mix 200 lbs. of ground rye, 100 lbs. of cottonseed meal and 100 lbs. of oil meal together, and feed each cow as many pounds per day of this feed as she produces pounds of butter-fat in a week. Feed what clover hay and roughage they will eat up clean without wasting.

A GOOD RATION.

I would like Mr. Lillie's opinion on the following ration which I am feeding my cows: The grain ration consists of 4 lbs. per head per day of oats and peas, (only lightly mixed with peas), ground, 7 parts by weight, 1 part cottonseed meal and 1 part linseed meal and 7 qts. (estimated) of corn in the bundle, or 3½ qts. of shelled corn. Roughage consists of one feed of mixed hay, one feed of cornstalks and one feed of oat straw. The corn and stalks are fed in the bundle at two feeds but it would amount to only one good feed of stalks.

Livingston Co. SUBSCRIBER.
I should call this a fairly good ration for dairy cows. Perhaps not the best, it is hard to tell about the amount of protein in the peas and oats where there is only a small amount of peas, but it is certainly in the right direction. I would much prefer to have the corn fed in the form of corn meal, but there is no serious objection to feeding it in this way, though I doubt if all of it is properly masticated and digested. It strikes me that good dairy cows ought to do well upon this ration.

PROFITABLE DAIRY COWS.

Quite often the question arises, what constitutes a profitable dairy cow? The answer must necessarily be a general one. A profitable dairy cow is one that will produce at least enough milk to pay for her feed and care, with interest on the necessary investment and a profit beside. She is a cow that will convert feed and labor into profits without removing the fertility from the farm. The cost of keeping a dairy cow depends largely on climatic conditions, the locality and cost of feed and labor. The average cost of keeping a dairy cow here in Illinois, as near as I can figure it, is about \$27.50 a year for a cow giving 3,000 lbs. of milk testing four per cent fat, which contains 120 lbs. of fat and yields 2,500 lbs. of skim-milk. The fat is worth about \$30 and the milk about \$5, making a total of \$35, with a profit of \$7.50 above cost of keep and feed. Besides this the calf is worth \$10 and the fertility retained on the farm is worth half as much more, making a total profit of \$22.50. This is not a fair type of the dairy cow. However, there are too many of this kind kept in this locality and considered by their owners as being as profitable as the best. The dairy cow that is really profitable is the one that will double the profits of the above mentioned cow. Those men who were not fortunate enough to buy large tracts of land when it was cheap years ago and who now have to farm more intensively and who like the mixed system of farming, are rapidly seeing that it does not pay to milk the cow that produces only about 120 lbs. of butter-fat per year when it is so evident that a cow producing twice as much can be secured by the application of a few principles. The cost of feed and keep is no more for a profitable cow than it is for one that barely pays her expenses and with the present demand for milk and butter the average farmer is beginning to see the need of more and better cows.

Illinois. L. G. JOHNSON.

MACHINERY ON "CHERRY FARMS."

The Cream Separator.

The advent of the cream separator proved to be quite an epoch in the conduct of "Cherry farms." The better half of the farm always contended that she would not be satisfied with any of the cream-raising devices until she could have the best, so we worried along with the old pan-setting way until about seven years ago, when we bought a separator of one of the best makes. We had a good reputation as butter-makers before we had a separator, but the demand for our butter

increased with the output from the separator, grocers driving out from the city, buying and engaging all we could make.

Of course, we increased our herd to the fullest capacity of the farm, and with the increasing of stock came the increase of home-manufactured fertilizer, thus enlarging the capacity of the farm and adding a permanent and reliable resource to the fruit farm and, with our location, I am not certain but that dairying is the more dependable and quite as profitable as fruit raising. Anyhow, they seem to go well together, and another thing, with the enlarging of the herd came the necessity for that other very useful tool on the farm, the

Manure Spreader.

For several years we had talked over the benefits derived from the more economical and satisfactory application of the fertilizers obtained on the farm, but could not seem to realize that with so small a farm we could make it pay to own so expensive a machine to remain idle such a large portion of the year.

My implement dealer, as an extra inducement to purchase a spreader, gave me what had accumulated in his barnyard. Eleven good 70-bushel loads. Then a neighbor, whose failing health incapacitated him for such strenuous work as hauling out manure, sold me 45 loads, which, together with what I could scrape up on the farm, gave me a good start in top-dressing a field of light, sandy soil which I wished to seed to clover. The field was sown with a light seeding of rye after corn. I then top-dressed it in the late fall. The mammoth clover was sown in the spring as the frost was well out of the ground, being followed with a spike-toothed harrow. The result was quite satisfactory. My spreader rentals have been quite gratifying. I have loaned my machine to a neighbor, for which I have received one dollar per day, and in three years I have had nothing to pay for repairs. I built a shed which not only houses my spreader but also shelters the manure from the cow stable.

Kent Co. J. A. SYMES.

IMPROVING DAIRY PRODUCTS.

The farmer cares for the cow and has the first handling of her product and upon him rests a responsibility he cannot transfer to another. Clean cows mean cleaner milk, and cleaner milk and cream, and a better care of these products until they reach the factory, would mean an increase in value and quality of our butter and cheese that I would hardly dare to estimate.

The ideal place for the cow is the pasture, and many a herd has been photographed and painted in all their beauty, comfort and cleanliness upon a sunny slope, carpeted with a luxuriant blue grass and white clover, and then driven up through a narrow lane, up to their middle in mire and mud. Then they are made to wade through something worse than mud to get into the stable door. Then they are milked and we are told the milk has a "fishy" flavor.

After milking, the gate to the lane is closed, so the cows will be handy in the morning, and they are turned out into a small yard, muddy, poached, and with no spot to camp for the night without lying in their own filth.

These conditions are not found upon every farm, but they are altogether too common. Lanes should be made wider, ravines should be bridged if flat and wet, a few hours with a road grader will throw up a pike which, when grassed over, will furnish a dry path for all time. Barns and yards should be constructed upon the driest land available and yards or corrals should be much larger than we usually find them. One hundred square rods is by no means too large for the cow yard upon the average sized farm. In addition to this, a night pasture near the buildings is certainly very desirable.

Wisconsin. L. E. SCOTT.

Hon. P. P. Lewis recently said: "I have used silage continuously for the past six years and am thoroughly convinced that it is not only the cheapest feed a farmer can produce but because of its succulence, is a great help in the digestion of other feeds."

Lowering of prices for dairy products has tended to lessen the demand for milk cows in western markets, and lower prices prevail at the Chicago stock yards for milkers and springers than were seen earlier in the year. Eastern buying orders show a marked falling off, and fewer cows are being sent to market.

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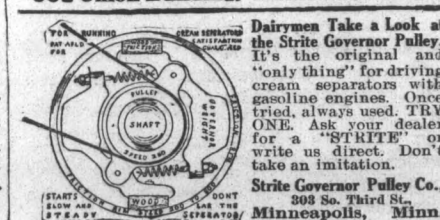
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THE CHANNEL ISLAND CATTLE.

There is a group of islands in the English Channel about ten miles from the coast of France, called the Channel Islands, the principal ones of which are Guernsey, Jersey, Alderney, Sark, Herm, and Jethou. The first three mentioned are the ones that produce the celebrated cattle. The climate is mild and agreeable, with no great extremes of heat or cold, and no sudden changes of temperature, making these islands a favorite resort for invalids and pleasure seekers. The scenery is varied, and very beautiful. The coasts are high, rocky, and very dangerous to navigators. The interior is mostly table or elevated level land, well wooded, especially in the valleys along the winding streams. The soil is generally light, deep and fertile, producing most of the crops and fruits of the temperate zones. The land is held in small parcels, say from five to 20 acres, and the principal crops raised are hay, wheat, potatoes, and root crops for feeding stock.

Butter making is the chief business of the farmers, and cattle have been bred with that object in view for 150 years for certain, and probably for a much longer period of time.

The number of acres in cultivation on all the islands is about 30,000. The native population is about 90,000 and the strangers, and visitors usually number about 15,000 on the island of Jersey alone, so agreeable is its climate and scenery. The islands belong to Great Britain, but the inhabitants are allowed the same home rule accorded to Canada and Australia.

The first cattle imported into England, and the United States from the Channel Islands were no doubt brought from Alderney, and from that circumstance and the great resemblance of the cattle to each other from all the islands, the importations from Jersey and Guernsey, were also for some time called "Alderneys." Then the smallest, and least populous of the three islands obtained for a while the sole honor of producing the famous dairy cattle of the Channel Islands.

The cattle on all the islands, no doubt had a common origin, as they have a great resemblance to each other and in the opinion of many good judges might properly be classed as one and the same breed. They have for a long time been kept separate on each island without admixture with other breeds, even with the cattle of the other islands. The local authorities, 147 years ago, enacted and have ever since enforced, laws against the importation of cattle except for immediate slaughter for beef.

Alderney is but four miles long, and about 1 1/4 miles broad, with a population of 2,800. The Alderney cattle are smaller than the Jerseys or Guernseys.

Jersey, the largest of the group, is 10 miles long and six miles broad, and has a population of 56,000. Mrs. Langtry, ("the Jersey Lily"), a celebrated actress and professional beauty, was born on the island of Jersey.

Guernsey is nearly as large as Jersey, being nine miles long and six miles broad with a population of 30,000. The cattle are larger than the Jerseys, and, like them, have always been bred for dairy purposes. They are rather coarser built, and larger boned, than the Jerseys but are not inferior to them in the milk-giving property, and on account of their larger size are preferred by some dairy-men.

The Channel Island cattle are classed among the small breeds, the cows usually weighing from 650 to 860 lbs. There were on the island of Jersey, according to her last census, 11,891 cattle, 2,343 horses, a total of 14,234 animals kept on 20,000 acres of tillable land; or one animal to one and four-tenths acres. It is said that on some farms containing only eight acres, from eight to 10 head of cattle, and two horses are kept, and kept well. Of course, it is done by soiling, and not by pasturing. On farms where the cattle are pastured, they are tethered to stakes and not allowed to trample all over the field. The farmers on this little island not only keep so large a proportion of live stock, but feed their permanent population of 56,000 inhabitants, entertain 15,000 yearly visitors, and in addition export from three to five millions of dollars worth of dairy and farm products every year. The yield of wheat is 30 bushels per acre. Fruit is cultivated especially grapes, apples, peaches, plums and apricots. About 30,000 bushels of table fruits are annually exported to London and Paris. From 16 to 17 lbs. of butter are sometimes obtained weekly from a single cow.

A bull, to win a prize, must be accom-

panied by his dam. They score both the dam and the bull, and the first prize goes to the bull whose score, added to that of his dam, foots up the highest.

Pa. J. W. INGHAM.

CARE DOES PAY.

One of our farm papers recently published an article that was, in effect, a defense of carelessly made country butter. Stating that it is a common complaint that the average farm product is not first-class, the author demanded, "What incentive is there for making it first-class when all grades bring the same price and all are dumped into a common receptacle for shipment?"

It would seem that the desire to furnish one's own table with wholesome, palatable, attractive butter should be a sufficient incentive to enforce care—which includes cleanliness, sanitary conditions, proper handling of milk and cream, proper washing and working of the butter, etc.; but to my certain knowledge, care, with its attending good results, financial gain in even most of the little grocery stores of our small towns.

When we were children there were produce wagons sent out from the stores during the summer. Some of our mothers would not sell their carefully made butter to them for it was dumped into a common receptacle and at the end of the route, the semi-melted conglomeration was shipped to the city where it was remade into salable butter. But that was several years ago and a couple of our neighbors are illustrative of the new order of things.

They take their butter to the same store. One receives the quoted market price for her pale, soft, watery product; the other invariably gets from three to five cents more for her firm, dry, yellow sort. The former's is probably always shipped to be re-made; the latter's is spoken for by town customers before it is even brought in. And in our towns, at least, five cents less per pound is paid for "crock" butter than for that moulded into bricks and wrapped in parchment paper. This is probably because it makes a finer appearance and is more easily handled; but, incidentally, it requires a firmer, better grade of butter to make successful bricks than may be put into crocks or jars.

Without ice or running water it is some trouble to properly care for cream and to make good butter during hot weather, but it pays to take this trouble if one is going to do anything along the dairy line for either home, or public consumption. Fresh, cold water must be used freely and frequently, and cool, morning hours are the better hours.

Many lose both time and money by neglecting the little things that simply must be attended to if good results are expected. Cream that stands before churning, must be thoroughly stirred two or three times a day. It must not be allowed to get too sour or both quality and quantity will suffer; it should not be allowed either to freeze or to scald, and it is best to keep it sweet (by low temperature and sterilized vessels), until twelve hours or so before churning, when a cup of butter-milk or sour cream should be thoroughly stirred in and the whole carefully raised to 70 degrees temperature and left to "ripen." Proper churning temperature is from 59 to 62 degrees, depending somewhat on the cream and the season—the thicker and fresher the cream and the warmer the season, the lower the temperature.

In the dairy, or elsewhere, it is only applied knowledge and experience that gives power, and the case of that housewife who confesses that she has churned once or twice a week for 20 years and yet, when she begins, never knows whether her labor will produce butter or slop for the hogs, seems hopeless. And one can scarcely look through a week's supply of farm papers without seeing several complaints of partial or total failures, and several queries concerning churning difficulties; when a little attention to details—care instead of carelessness—would mean success.

Iowa. F. NISEWANGER.

Dairymen should be good seers, and then they should act on what they see.

When you come right down to hard facts, how very few dairymen do the very best they know how to do, in the matter of shaping their business for the greatest profit.

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POULTRY AND BEES

SOME SEASONABLE SUGGESTIONS.

During these cold, damp days of winter extra care must be exercised to keep the chickens free from colds, roup, etc. Keeping the digestive organs of the fowls in good condition is one of the greatest safeguards against disease. The liver and bowels are the organs requiring most attention as the assimilation of all food depends upon their condition. They should be in good working condition always. The bowels must be kept open and acting freely. Should they become sluggish from overfeeding or over fatness, a dose of epsom salts is beneficial. The salts should be dissolved in water and mixed with ground feed to insure even distribution. Constant dopping with liver medicines is not to be counseled, however. If the fowls are properly fed and are made to exercise a great deal, very little liver medicine will be needed, and they will be far better off. Providing the right kind of feed goes a long way toward keeping fowls in good health. Green feed, a moderate amount of meat meal and mash all help to keep the liver and bowels active.

Never keep a hen that does not bring in a profit. There are far too many hens of this class on the farms of this country. Trap-nesting is one of the greatest money-saving practices in the handling of poultry. If every poultry raiser could install trap nests and weed out the poor layers, what a difference there would be in the egg yield. Owners of hens would discover that some hens which appear in the pink of condition never lay an egg. Only this season I had a pullet, hatched last March, that never laid an egg, while those hatched several months later were almost all laying. She looked to be in good health, had a good red comb and active disposition, but never was found on the nest. She was finally killed for market to save further feeding. I am satisfied that without the use of the trap nest I could not have determined whether she laid or not. The trap nest is also indispensable in determining which hens to breed from. Where one has only a few hens that are good in size and shape and has not the room to pen them away from the other hens, the trap nest is invaluable. Other hens, even of a different breed, can be allowed to remain in the pen with the breeders, so long as there are not too many for the male bird, and as eggs from the hens that are to be used as breeders are marked with the band number, they are easily distinguished. Another thing, certain hens never fertilize their eggs, and when this is detected by the use of the trap nest they can be excluded from the breeding pen.

Cleanliness in the poultry yard should be the watchword at all times. This is essential if the fowls are to be kept free from lice and vermin and in the best of health. Disease can be more easily prevented than cured, and uncleanness is certainly conducive to disease. Lice and mites must be incessantly fought. Kerosene and crude carbolic acid, thoroughly mixed, should be resorted to often. Take out the roosts and give the under side a thorough coating of this mixture. The under side of the perch, where it rests upon the support, is a breeding place for the little red lice. Close inspection is often necessary to detect them, but they are usually present in the day time, leaving their hiding place to prey upon the fowls at night. Clean the droppings board often, at least twice a week. After each cleaning cover the board with air-slaked lime or ashes to absorb the liquid droppings. Fine coal ashes are excellent and help to rid the place of lice. Air-slaked lime is best, however, as it is a good disinfectant but cannot always be provided. I prefer to dust lightly with lime and then cover with ashes, as I am inclined to believe that much walking in the lime will cause the hens to have sore feet. The fowls should be dusted once every month, if possible, with a good insect powder. Persian insect powder is a cheap and very effective preparation.

The setting of the hen, while considered insignificant by many, is really an important part if good hatches are to be obtained. Providing any kind of box for setting purposes, so long as there is straw in it and eggs for the hen to sit on, is not sufficient for the best results. In the early spring, when the weather is still cold, the hen must have a warm nest

to do her best. Several thicknesses of newspaper should be placed in the bottom of the nest to prevent any possibility of draught, and then thoroughly sprayed with coal oil to prevent lice. Then put in a few inches of moist loam, and, lastly, finely cut hay or sweepings from the hay loft, well packed down and slightly hollowed out to allow the eggs to be easily shifted about with less liability of breaking. Never put more than 11 or 12 eggs under a good-sized hen in cold weather. A small-sized hen should have only nine eggs at the most. If a full setting is placed under the hen there is danger of chilling most of the eggs at some time during the hatch, as the eggs on the outer edge cannot be sufficiently heated to hatch vigorous chicks. Do not set an extra large or heavy hen as she is liable to break several eggs in getting on and off the nest. The contents of the broken eggs will cover the other eggs, thus clogging up the pores in the shell, with the result that a poor hatch is obtained.

Indiana. O. E. HACHMAN.

YEAR'S ACCOUNT WITH HENS AND COWS.

We have been farmers but a short time but I venture to give a little of our experience. We began keeping a book account of the work of our hens and cows on Jan. 1, 1910. At that time we had 12 old hens, 45 pullets and a pair of turkeys. These were kept in a very poor old coop and a poorer scratching pen. We read everything obtainable on poultry and fed everything that anyone suggested with a view to producing eggs. The year's result is as follows: Eggs and young poultry to the value of \$104.75 were sold. At close of year we had on hand 12 hens and 50 pullets, the latter having not yet begun laying. We paid out, for feed, \$28.55, leaving us \$76.21 for our trouble. Of course, the chickens and turkeys, what few we raised, ran at large and stole all the corn they wanted during the fall. We are quite well satisfied with this first effort with chickens.

We had, at the beginning of the year, five cows that were considered fair. We sold milk to the creamery most of the time. Four of the cows came fresh during the year. From the sale of milk we secured \$345.33. The calves sold for \$18.50. We spent, for grain, bedding and breeding, \$99 and bought one calf (a heifer) to raise for \$5. We thus find that the cows have given an average return of \$51.97 for the year. We had no way of determining just how much the clover hay, cornstalks and pumpkins they consumed were worth, for these were raised on the farm and fed out freely. Now did those cows pay us? Did the chickens pay also? Is not a flock of 50 hens worth as much to a farmer as a good cow, and should not the hen have as good a place to eat and sleep?

Newaygo Co. FARMER'S WIFE.

GOOD RESULTS FROM PULLETS.

Exceedingly good results from a small flock of pullets are reported by Mrs. W. H. Thayer, of Montcalm Co. She has a pen of seven Plymouth Rock pullets that were hatched in an incubator on the last day of May, 1910, and were purchased by her one week later. On the second of November, when they were a few days over five months old, she found an egg in their pen and during that month they laid 44 eggs. During December they produced 48 eggs and followed this up with 101 in the month of January. Eleven more were added during the first two days of this month, at which time the report was sent, making a total of 204 eggs from Nov. 2 to Feb. 2, a period of three months, from seven pullets only a few days more than eight months old.

ADVISABILITY OF KEEPING BEES ON THE FARM.

I know many farmers feel that they now have as many calls upon their time and energies as they can attend to, and as they also realize that bee-keeping is an art in itself and requires no little intelligence and study to conduct it in the best fashion, they are apt to be averse to adding it to their already manifold duties.

I think however, that there is another way to look at this matter. In almost every business, the person engaged in it will be more successful if he adds some recreative work. This, if entirely different from his regular work, will give restful pleasure and make life pleasanter. Bee-keeping is especially desirable in this

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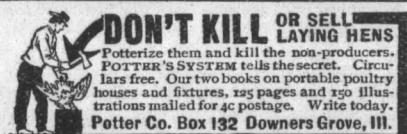
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connection, as there are very few kinds of work that are so full of interest and so generally attractive. There is so much that is marvelous in the economy of the honey bee that the bee-keeper must be stupid, indeed, who does not become an enthusiast.

I think, then, that any farmer might well take up the study of bees from an intellectual point of view; and, for object lessons or illustrations of what he has studied, he may well keep a few colonies of bees. These will bring him much pleasure, as he observes and studies them, and the bees will be right at his door to perform the important work of pollination in his orchards. It seems to be the general opinion that bee-keeping and farming make the best combination, and that the farmer-bee-keeper is the sure winner on the road to success.

Everyone growing fruit, or any plant that is intended to yield seed, should be interested in bee-keeping. There is a nurseryman and berry grower who has a farm about 2½ miles from my home apiary, just a little too far for the bees to visit, so by mutual agreement I keep about 30 colonies on his farm, running them for extracted honey, and we both are benefited by the agreement.

Nearly all parts of the country produce honey in quantities sufficient to pay for the gathering. The amount of honey that goes to waste every year for the want of bees to gather it is very large, in fact, too large to estimate. Every farm has on it fruit trees, berry patches, clover or buckwheat fields, the nectar from all of which, in the absence of bees, is evaporated by the sun and practically wasted. The forests also contain many linden and whitewood trees which are good honey yielders. Then there are the autumn flowers, such as boneset, goldenrod, heartsease, and wild asters, blooming for a succession of two months, from which the bees do not only store a quantity of surplus honey, but also fill the brood nest of the hive for winter stores. In my locality bee-keepers get the most and finest honey from autumn wild flowers which grow at random everywhere.

Best Time to Buy Bees.

The proper season to buy and transport bees is about fruit-bloom time. Then they are breeding plentifully, young are born daily, and the loss of bees which may go astray will soon be made up by the constantly hatching brood. In the spring the hives are lighter, the combs containing much brood but little honey. There is, therefore, much less risk of breakage. The beginner who buys bees in the spring usually takes a daily interest in them. His daily or weekly visits will not injure them, especially if their needs are properly attended to, while in the fall he would only be injuring them by disturbing them so often.

The second reason for advising one not to buy bees in the fall is that there is much more risk in transporting them at that season than in the spring. The combs are more likely to break in transit. Also, the bees are probably all old enough to be acquainted with the location, and more of them will be lost when putting them on a new stand, especially if but little distant from their former location.

Wintering is probably the most difficult part of bee-keeping, and it is hardly advisable to buy bees just before they have to face the winter, for a beginner would scarcely be able to judge of the strength and wealth of the colony. It would, therefore, be much easier for a dishonest dealer to sell worthless colonies in the fall. The bees that go through the winter safely and appear at all strong in the spring, are about sure of a good prospect. In the fall, breeding has stopped and it is more difficult to ascertain whether the bees have a good queen, and it takes quite a little experience to be able to know positively that they have enough honey. The foregoing advice should not, however, be taken as being always absolutely correct. You may have a chance to buy from someone who must move away, or who needs the money, and may find quite a bargain in thus securing them; but you should not buy them without at least taking the advice of some person who is accustomed to handling bees, and who can examine them and inform you as to their prospects and condition.

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When chicks are hatched under hens give the hens a good dusting with insect powder at time of setting and once a week thereafter. Give the nest a good coat of whitewash, both inside and outside, to which has been added coal oil or crude carbolic acid.

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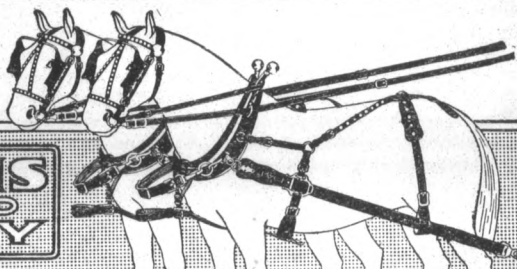
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The Lawrence Pub. Co.,
Detroit, Mich.

DETROIT, FEB. 25, 1911.

CURRENT COMMENT.

In the last issue we commented upon the tariff policy which has been pursued by our government, and attempted an analysis of its effect upon the agriculture of the country, in which we believe it was clearly shown that while the protective tariff policy has been greatly to the advantage of other industries by enabling producers in other lines to sell their goods at a premium above the world price yet, until in very recent years, the farmers of the country have been obliged to sell practically all of their products on a world price level, owing to the opening up of vast areas of rich land which stimulated production to an extent that gave us an exportable surplus in practically all of their products. It was pointed out that this advantage enjoyed by urban industries had made them relatively more profitable than agriculture, for which reason they have drawn upon the rural population for recruits, until a more equitable balance between production and consumption of staple foodstuffs has been brought about. Now that the farmers of the country have begun to enjoy a degree of prosperity from the operation of this economic law, it is proposed to add another vast area of rich land to our already great resources for the production of foodstuffs by means of this agreement with Canada, apparently with the well founded hope that by this means an exportable surplus of staple agricultural products will be perpetuated for years to come, still permitting those who are engaged in our urban industries to purchase their staple foodstuffs and raw materials at the world price without being compelled to sell their products on the same basis.

It would appear that little more argument is needed to prove conclusively that this policy would be injurious to our agriculture. Our farmers are just beginning to look forward to the time when they will be able to exchange the products of their farms for the products of other industries on an even basis, when it is proposed by this means to remove that prospect from their mental horizon. But, as noted in our comment of last week, we are firmly of the opinion that the success of this proposition, will, in the end, react upon the other industries in a way which

will be felt just as keenly as will the unfair competition, brought about by the opening up of our markets to the product of vast areas of virgin soil, by our farmers. And, further than this, that the power of public opinion which will result from such a move, will make itself felt in a successful campaign for the placing of other products on the free list along with the products of the farm. In other words, it appears certain that the adoption of this agreement will be but the beginning, rather than the end of the country's economic troubles, which would be accentuated by a rapid drift toward free trade all along the line.

In this connection, it would perhaps be pertinent for us to look into the effect of the free trade policy of England, as a side light on the problem which now confronts us. Practical free trade was adopted in England at a time when her urban industries greatly predominated, with practically the same effect upon her agriculture as that described as the result of our tariff policy, upon the agriculture of our country, the difference being due to the fact that England was essentially a great manufacturing nation, while our country was essentially an agricultural nation during its process of development. The result of the policy of letting in the agricultural products of the world free of duty was to greatly reduce the production of staples in that country, with a corresponding reduction of land values, a result which is bound to be felt in a lesser degree in this country if our markets are opened up to the products of the hundred million or more acres of fertile Canadian lands. Now the tariff question is again an issue in England, and the plan of bringing her colonies into a closer union with the home government and the enactment of protective tariff laws for the better development of industries in which they are mutually interested is being agitated.

Likewise the adoption of this agreement will make the tariff a live issue with the farmers of the country at a time when its consideration will be unhindered by the pressing necessities or the compelling prejudices which resulted from the civil war and the causes which contributed to that conflict, and with which the tariff as a political issue have never before been entirely dissociated. Our farmers, as a class, are seeking no advantage over other producers, but they are becoming more insistent, and rightly so, in demanding a "square deal," which they certainly would not get through the adoption of this agreement.

In the discussion of this question, the war scare, which has served its annual purpose in quieting opposition to large appropriations by congress for the improvement of our navy, has been brought out of its closet to serve as a reason for the adoption of this agreement, notably by Gov. Osborn in a recent statement. If this argument is to be given serious consideration by our readers, we believe it to be an added reason why they should oppose the agreement. In the first place any "yellow peril" of which we are in danger is just as imminent for our neighbors on the north. Our interests would be their interests in such a contingency, regardless of the mere commercial consideration of its effect upon their market for agricultural products. But, regardless of this, a home production of foodstuffs which is adequate for the needs of a country is one of its greatest resources in time of war, and as a safeguard against any future dangers from the yellow peril, it would appear to be the wisest policy to build up our own agriculture, which we can only do on a business basis of profitable production for our farmers, rather than to further deplete our power of production by perpetuating conditions which have already dotted the east with abandoned farms and drawn heavily upon the fertility of the soils of the middle west, by making soil robbery necessary to the gaining of a livelihood on the land.

But so far as our readers are concerned further arguments are not needed. Judging from the tone of the many communications we have received and the many expressions we have heard, both in public and private, from farmers in all sections of the state, they are practically of one mind in their opposition to this agreement. But expression of sentiment is of little avail, except as it is addressed to the two senators who represent Michigan at Washington, and no time should be lost by any reader in communicating his views to them. Before another week has passed final action will have been taken by the present senate on this proposi-

tion. While many believe there is little danger of its passage by that body, yet great pressure is being exerted to that end, hence those who oppose it should act at once.

In a recent issue we commented on the contention of Michigan railroads that they are being taxed at a higher rate than other property of the state, owing to the alleged under assessment of other properties and on the threat that unless relieved by legislation they would refuse payment of their taxes and carry their complaint to the courts. Since that time Gov. Osborn has thrown down the gauntlet to the railroads by the statement that, even if their contention were true they have no grievance, as they should properly pay a higher tax than the farmers of the state, since they enjoy privileges under their charters and the laws of the state which the individual does not enjoy. Another development has occurred in the publication of a statement by Attorney General Kuhn in which he practically says that the threats of non-payment of taxes and litigation, which would hold up the primary school money, are mostly bluff, and in which he takes up the legal phases of the situation in detail. Briefly stated, his principal contentions are that even if the railroads could show an inequality in assessments as they claim, they would not have a good case in court unless it could be shown that there was collusion among assessing officers to so under-assess the general properties of the state so as to increase the burden of taxation borne by the railroads. In any event, the Attorney General contends that litigation could not be begun until the taxes had been paid, or at least all of them but the claimed difference between the rate applied and the rate which the railroads expected to be able to prove should be applied. Also, that the legislature has the right to classify property for taxation purposes and determine the means of arriving at the rate to be applied to it. Other reasons were advanced to show that court precedents are favorable to the position of the state, and that there is little to fear from the threatened litigation.

Nor do we believe there is much to fear from any action of the legislature looking toward a change in the plan of assessment now in force. The fight for equal taxation has been too long and too strenuous to warrant an easy sacrifice of the principle involved. Equality and justice are desirable and the average taxpayer is not looking for more. But having enjoyed a measure of it in taxation matters he will not look with favor on any backward step.

Spring Management of Highways.

For some years, both through the agricultural press, experiment station bulletins and from the lecture platform, the merits of the split log drag as an implement for the improvement of highways in the spring season, after the melting snows, the spring rains and the heaving frosts have left them soft and water soaked and deeply poached have been emphasized. In various communities the efficacy of this sort of treatment has been proven by experiment times without number, and yet comparatively few localities have as yet taken advantage of this cheap method of facilitating travel and the hauling of loads on clay roads during the early spring, when the frost has left the ground. If more people were conversant with the benefits derived from this method of managing clay roads in the spring season, there would soon be a general demand for the use of such methods by the highway officers in every township. As a matter of education it would be profitable for some progressive man in every community to prepare such an implement and use it on a stretch of road adjacent to his farm upon seasonable occasions. Simply split a small log about eight feet long in halves, bore some two-inch holes in either half at equal intervals and insert strong cross-pieces about three feet long, brace diagonally, and the task is done. Use the implement at the right time on a short stretch of road as an object lesson, and much will have been accomplished toward the betterment of the highways of that neighborhood in future years, not alone in making them more passable in the spring but as well in minimizing the cost of maintenance through neglect at the season when they are in the worst condition. After demonstrating what can be done in the way of improving the roads with this device, it will be easy to promote its official use.

HAPPENINGS OF THE WEEK.

National.

Saginaw is seeking to dissolve under the combine act, the merger of three lighting concerns doing business in the municipality. The case is of state wide interest and is the first instance of a city trying to destroy such a merger under the above law.

Quo warranto proceedings have been started by the attorney-general of Ohio to oust seven railroads from doing business in that state. Stock jobbing, and conspiracy to suppress and destroy competition in the transportation of bituminous coal, are chief among the 18 grounds for bringing the proceedings.

Boilermakers on the Lake Shore & Michigan Southern railroad have gone on a strike.

The senatorial fight is still on in New York, with the chances of a selection about as promising as when the first ballot was taken.

The China-Japan fast mail train east-bound over the Southern Pacific road, was wrecked in the mountains west of Palisade, Nevada. The details of the accident were not reported.

Senator Nelson W. Aldrich, who has generally been counted as an opponent to the trade agreement with Canada, announced Monday that he would support President Taft in his campaign for the measure.

On Monday Representative Hobson, of Alabama, in speaking of the necessity for allowing the appropriation bill for the navy predicted that this country will have war with Japan within ten months.

By shipping distilled spirits direct from the manufacturers at Chicago to dealers in Brooklyn, N. Y., the parties evaded the revenue inspectors and defrauded the government of around \$200,000 in taxes. The parties were arrested.

The state legislature is getting anxious about conditions in our penal institutions where, unless laws prohibiting contract labor is repealed, the convicts will be without employment. To put the men to work on the state's account will require a larger outlay of capital than the legislature desires to go on record as appropriating.

President Taft has announced that unless the federal senate passes the bill providing for the adoption of the trade agreement with Canada, he will call a special session for that purpose March 4.

Owing to the necessary time for the certification of the votes at Phoenix, Arizona, getting the papers to Washington, and through the proper routine necessary, Arizona will not become a state by the act of the present congress. It is asserted that much opposition is expressed regarding the constitution submitted by the people for the consideration of the federal legislature. The ratification of the constitution of New Mexico is now before the committee on territories. It is planned to get the instrument before congress this session.

The recent thawing of snows in the western states has swollen the streams of that part of the country and the Des Moines and Mississippi rivers are rising rapidly, according to the latest reports. At Burlington, Iowa, the Father of Waters has been rising at the rate of 18 inches in 24 hours. Along some of the tributaries stock has suffered much and in some cases people have been compelled to move to higher ground. The cold wave will check the rush of the waters to the larger streams.

Foreign.

Documents have been signed whereby France and Portugal will treat each other as most favored nations.

The value of sanitary measures in combating disease is recognized for the first time, in a general way, by the Chinese government, and an effort is being made to get to the towns and cities information regarding means of fighting plagues, and where it is necessary to over-ride superstition, orders have been issued by the imperial government to the police and soldiers to disregard the beliefs of natives and do what is necessary to protect public health. Cremation of bodies of persons who have died with the plague, has become common in spite of the horror held by the Chinese of such disposition of the remains of their countrymen.

The German cruiser Von Der Tann, of Germany, is being sent to South America on an advertising expedition to demonstrate to the South American republics the superiority of German battleship construction. The cruiser purports to be the fastest afloat.

A bill has been enacted by the Cuban congress and signed by President Gomez, granting a 30-year concession to a company to dredge and improve the Havana harbor.

Japan has notified Canada that she wishes to terminate the commercial treaty between the two countries as agreed to in 1905. The six months required before the convention is dissolved will be used to frame a new instrument and should they fail to agree the provisions of the general tariff law will rule.

China has agreed to the continuance of the treaty of 1881 with Russia and thereby miscarried conditions that might have developed trouble between the countries.

CROP AND MARKET NOTES.

Eastern Oceana Co., Feb. 11.—Winter has come again and last Monday, (Feb. 6), was the wildest day of the season. Our January thaw was late in coming but it got around in time to say it was a January thaw. Farmers were very busy all through the warm spell getting out their potatoes, the price holding steady at 25c at loading stations. Stock is wintering finely, with plenty of roughage to carry them through the winter. When the snow went off it showed the alfalfa looking green and nice. Now it is covered with snow again and bids fair for a

good crop next season. Wheat and rye also look well. There has been a large amount of ice put up for summer use and of very fine quality. Farmers are busy now getting their year's supply of wood. Not much marketing of produce now. Wheat, 85c; rye, 75c; oats, 40c; corn, 35c; potatoes, 25c; live pigs, \$6.75@7 per cwt.

Livingston Co., Feb. 13.—We are now having another mild spell and snow is nearly all gone but the roads are still in excellent condition. The past month has not been very favorable for wheat and clover, though they show no serious effects as yet. Lamb feeders are beginning to sell their lambs though the prices are far from satisfactory. Feeders who put in cattle instead of lambs stand a much better chance of making a profit. Not many hogs left in the country. Hay going to market at good prices. Farmers busy getting up their summer's wood supply.

Sanilac Co., Feb. 16.—The past 36 hours has burdened the trees in this locality with the thickest ice we have experienced in years and the damage done not only to orchards but shade trees, vineyards and forests is great. February has been rather a mild month so far and the fields are getting a little too bare. Sleighing about gone. Farmers are searching the country for hired help for the coming summer, with very little to be found. Some potatoes are moving at 27@30c per bu. Quite a percentage of beans are being held for \$2 per bu. The reciprocity agreement with Canada is causing considerable restlessness. Markets are: Cows, fat, \$3.50; steers, \$4.75; hogs, \$7; veal, \$7 per cwt.; hay, \$12 per ton; wheat, 86c; oats, 29c; beans \$1.75 per bu.

Mecosta Co., Feb. 13.—Although we have had a few cold days this winter, it has been, as a whole, a very mild winter up to this writing. Live stock coming along in fine shape. Fat hogs and cattle are practically all sold out of this section at very good prices, but the horse market is not as active now as it generally is. There was quite a slump in the potato market but it has enlivened up considerably in the past two or three weeks so that the farmers who held their potatoes have taken new courage and some think they will get 50 or 60c per bu. before spring. Cream dropped down to 23c per lb but is at this writing worth 25c per lb. for butter-fat. Eggs are nearly as cheap now as they were at any time last summer, 20c per dozen. Several farms have changed hands this winter, at good prices. Farmers are taking deep interest in the proposed legislation for "Canadian Reciprocity." We should study it, and whether we consider we are to gain or lose by its enactment, should write our congressmen and senators expressing our views.

Gratiot Co., Feb. 11.—Gratiot is now enjoying ideal winter weather, except for the fact that for teaming there is neither sleighing or wheeling. Light rigs go well either way. Soft weather prevailed all through the last week of January. This removed the ice and nearly all the snow. Wheat and grass were then green. Fields are again covered with a light blanket of snow. Butter and eggs have taken a slide since last month, the markets paying but 12@17c for butter and 17c for eggs. Beans are also on the decline. The stock market shows little change.

Genesee Co., Feb. 11.—More snow, followed by fine winter weather. Days are bright and sunny and now a few days of thaw. Business good. Farmers generally against proposed tariff changes with Canada, believing it would work injury to them. Local option campaign now opening as resubmission was declared for April. If the farmers again vote dry as they did two years ago the result will probably be another term with no saloons. Business men as a rule are more favorable toward local option now that it has been given a trial. Market as follows: Wheat, 90c; oats, 30c; corn, 48c; potatoes, 45c; eggs, fresh, 24c; butter, 26c; baled hay, \$10@13; pork, 9 1/4c; beef, 6@8c; dressed chickens, 14c.

Ottawa Co., Feb. 6.—About Jan. 20 it commenced to thaw and in a few days the fields were bare of snow, and they have remained in that condition up to date. At this writing a blizzard is raging and the ground is again covered with snow, which is being badly drifted, making it bad for the rural mail carriers. When the snow went off wheat looked nice and green, and the ground was not frozen. But now the ground is frozen quite hard, and wheat got so it looked very brown and shriveled up, so the snow that is now falling will be a great benefit. The two day farmers' institute that was held at Coopersville last week was well attended, and great interest was manifested by those who were present. The reason for this was because most of the speakers were practical farmers and talked along the line of actual experience and not theory.

Perry Co., Feb. 13.—We have had very mild weather the past four weeks, too warm for winter. Feb 1st was 80 above. Had only one light snow so far this winter. Fruit is certainly in danger should we have any very cold weather. Roads are pretty good for the time of years as we have not had as much rain as common. Considerable corn, hay and stock peas shipped from here the past month. Coal mines not doing much; weather has been too warm. Horse and cattle buyers have been active. Fat cattle bringing 4 1/2@5c; dressed hogs, 9c; eggs, 16c; butter, 15c; hens, 10c; potatoes, 40c per bu; apples, \$2 per bu; hay, red top, \$10 per ton; timothy, \$15; cow pea, \$8@10; stock peas, \$1.50@1.75 per bu; corn, 40c; oats, 35c per bu.

Ohio.

Montgomery Co., Feb. 7.—The weather has been rather mild the past two weeks. Wheat is looking fine. Tobacco about all stripped; not much sold as yet. Auction sales are plentiful with stock selling high. Wheat, 92c; corn, 40c; oats, 30c; rye, 62c; clover seed, \$7.50; butter, 18c; eggs, 18c; lard, 12c; potatoes, 50c.

Carroll Co., Feb. 8.—Weather is very

changeable. Roads are almost impassable, because they are washed out very badly. Some corn isn't husked yet. Prices on horses and cattle are very high. Some farmers started to plow already. Some are cutting mine posts. Corn, 60c; wheat 95c; oats, 45c; buckwheat, \$1; butter, 26c a lb; eggs, 20c doz; potatoes, 70c per bu; hay, No. 1 timothy, \$18 a ton.

Lucas Co., Feb. 6.—January was a mild month and the heavy snowfall of December all disappeared and wheat looked good. At this writing it is snowing hard and the ground is covered again to a depth of eight inches, which will protect wheat for the balance of February at least. Cattle and sheep are doing well, also feeding hogs, but the damp weather does not seem to agree with the small pigs and farmers are complaining of losses among their pigs. Poultry is about all marketed. But few apples and potatoes left in farmers' hands. Hogs, \$7.50; cattle, \$4@5; sheep, \$3@5 per head; lambs, 5c per lb; veal, 7@8c; poultry, fowls, 11@12; potatoes, 40@50c; apples, \$1 per bu. and scarce; butter, 18@20c; eggs, 18c; Wheat, 88@90c; corn in the ear, 58c per cwt; oats, 32c per bu.

Wayne Co., Feb. 6.—The weather is very fine, being open and very mild for the season. The snow left the last week in December and there has not been enough to cover the ground since. Wheat is looking very good, considering the open weather we have had. There are lots of auction sales this spring, and everything selling high; common cows selling for from \$50@95 per head. Wheat, 90c; oats, 35c; corn, 50c; pork, \$9.50 per cwt. dressed; butter, 20c per lb; eggs, 20c per doz. Wisconsin.

Ashland Co., Feb. 4.—February came in rather fine and the old woodchuck had no trouble to see his shadow this year. Had a three-day thaw the latter part of January which settled the snow about half, but since then have had a fall of about eight or 10 inches more, so have 20 to 24 inches now in the woods, and a very bad snow to get around in on account of the crust. Logging is going on at a rapid rate and loggers expect to clean up in about four to six weeks. Crops are well covered with snow at present but were partially bare in January on account of high winds. The ice crop is No. 1, could not be better. Hay, \$22; oats, 50c; butter, 30c; eggs, 28c; potatoes, 45c.

ROUND-UP FARMERS' INSTITUTE.

The State Round-up Farmers' Institute to be held at the Agricultural College, beginning on Tuesday, February 28, and lasting four days, promises to be the largest and most successful ever held in the state.

On Tuesday afternoon and Wednesday, Thursday and Friday forenoons the series of lectures begun last year by Professors Kedzie, Jeffery and Shoemith upon "Manures and Fertilizers," "Soil Moisture," and "Farm Crops" will be continued. The discussion of these topics will be found very helpful to all farmers.

The afternoons of Wednesday, Thursday and Friday will be given up to the usual general program. Among the speakers will be E. Cyrus Miller, of Massachusetts, who will speak Wednesday afternoon upon "The Care of the Apple Orchard," and Thursday afternoon upon "Getting the Most from the Apple Crop." Mr. Miller is one of the progressive fruit growers of New England with 300 acres of orchard under his charge. Paul Rose, the well-known orchardist of Frankfort, Michigan, will be present and speak on "Intensive Methods of Fruit Growing" on Wednesday afternoon.

On Thursday, Professor Geo. C. Humphrey, of University of Wisconsin, will speak in the afternoon upon "The Feeding of the Dairy Cow," and on Thursday evening will give an illustrated lecture upon "The Conservation of Good Dairy Blood."

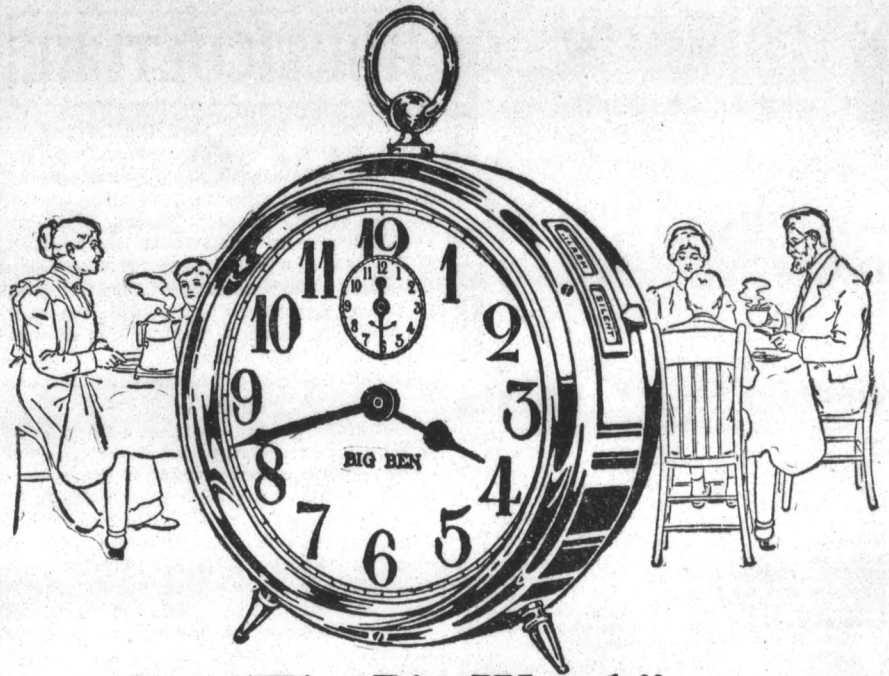
No farmer who can possibly attend should fail to hear the addresses of Mr. Willis O. Wing, of the well-known firm of Wing Brothers, of Ohio, specialists in corn and alfalfa with 1,000 acres under the plow. Mr. Wing will speak, Thursday afternoon, upon "Up-to-Date Corn Growing," and on Friday afternoon his subject will be "Points in Alfalfa Culture."

Among other speakers will be Professor W. A. McKeever, Agricultural College, Kansas, who will give an address on Wednesday afternoon upon "Better Boys and Girls on the Farm," and, on Wednesday evening, "Some Practical Aspects of Race Building." Judge Chas. B. Colingwood will speak the same evening on "The Conservation of Boys."

An illustrated address upon "Resources of Northwestern Michigan" will be given on Tuesday evening by Mr. John I. Gibson, secretary of the Western Michigan Development Bureau, who will also have on exhibition a considerable proportion of the fruit exhibited at the Chicago Land and Irrigation Exposition.

Hon. Charles W. Garfield will speak on "Play Grounds and their Mission" on Wednesday evening, and Professor John Hamilton, of the U. S. Department of Agriculture, Farmers' Institute Specialist, will be present Thursday, and his topic will be "Educating Lecturers for Farmers' Institutes." Other speakers will be J. N. McBride, Burton, upon "The Native Lamb as a Feeder Factor," and Dr. R. P. Lyman, the new head of the Veterinary Department, upon "Feeds and Feeding and their Relation to Health." Professor G. W. Bissell will speak on "Modern Methods of House Heating," and Frank F. Rogers, Deputy State Highway Commissioner, "The Building and Care of Gravel Roads." On Thursday evening one of the speakers will be Prof. R. S. Shaw, whose address will be on "The Michigan Agricultural College and Its Work for Farmers."

Special sections for the women will be held on Thursday and Friday, both forenoon and afternoon. A splendid program will be presented.



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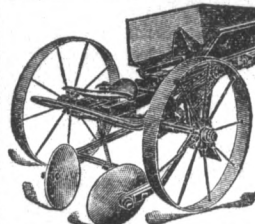
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HORTICULTURE

FRUIT FARM EQUIPMENT.

In accordance with the topic suggested for February, I wish to take up a special branch of the theme, "Farm Buildings and Equipment," as related to the fruit farm. As I have already written upon this topic in a general way I do not wish to repeat anything discussed in the previous article, but will consider this as supplementary to it along the line of buildings and equipment for the fruit farm.

Buildings.

The buildings required for a fruit farm will be much the same as those required on a general farm, providing some general farming is carried on with the fruit farming, except that they they need not be so extensive. Where there is land enough I believe it is desirable for the fruit farmer to conduct some general farming, enough to grow the hay and grain needed for his teams, and feed for a few cows and hogs. These will furnish some straw, roughage, and manure so much needed on a fruit farm, and will enable the fruit farmer to keep his help and teams employed during slack times in the orchard or small fruit plantation.

Aside from these general farm buildings, including sheds for the storing of all tools, there should be a packing house of some kind. The kind, size, and arrangement will vary with the extent and kind of fruit grown, also with the method and time of marketing, and many other factors. If small fruits are to be kept for any length of time in it, or are to be shipped from it in carload lots, some form of artificial cooling will be desirable. If to be used only as a fall storage for apples, it may be made so as to be nearly heat and frost proof, and a good system of ventilation provided, so the building can be kept fairly even in temperature by keeping it closed on warm days, and throwing it open on cool nights.

If the building is to be used only as a storage for crates, barrels, baskets, tools, etc., and as a packing house for immediate sale or shipment it may be more cheaply constructed, so as to be simply a protection from sun, rains, and wind. The extent of the investment in such a building must of necessity vary with the extent of the business and kind of markets, but all fruit growers will need some kind of packing house where fruit packages can be kept collected, repaired, and stored in a dry, clean place, away from poultry and the dust and dirt of a general barn. Also a place to pack and store fruit when necessary, and to keep sprayers, spray material and other equipment.

This building should be reasonably near the residence, as there will be many trips to and from it to the house and other buildings. In some cases other buildings may be needed in the orchard or small fruit plantation to serve as temporary storage and packing houses. These may be cheaply constructed, and in the case of small fruits should be moveable. For the latter tents are cheap and convenient.

Trees, Plants or Vines.

While trees, plants or vines might not technically be considered equipment, they are nevertheless the most essential part of the appliances by which the business of fruit farming is carried on, and we should see that they are suited to our purposes and are the best varieties obtainable. They should also, along with our tools, receive the best of care, and be kept in good repair at all times, for trees and plants need replacing, and repairing just as do tools, and it is more of a waste to put our labor upon poor trees or plants which will not respond to it as they should, than to put it upon poor, worn out soil, or to use inefficient tools.

Pruning Tools.

For orchards the principal pruning tools needed are saws, and shears of various kinds. We prefer a light saw with a curved blade and teeth on both sides, a draw cut on the concave side and a push cut on the convex one. This rests the operator and enables him to make cuts in places where he could not with a straight saw. Good, strong steel pruning shears to be operated with one hand are a necessity on every fruit farm, for pruning small trees, cane fruits, and grape vines, or in taking water sprouts and small branches from larger trees. The kind which cut from both sides leave a cleaner cut, unless one is careful in using the single cut shears to have the cutting blade next to the parent branch, but the single-cut shears are easier to use as they present

a V-shaped opening to the branch, and need not be opened as far as the double-cut shears whose points curve inward, and leave a narrow opening at the end. The same will apply to the shears with handles two to four feet long to be operated with both hands. These shears are almost indispensable in pruning trees from three to ten years old, and are very handy for water sprouts and the outside lower branches of older trees, in fact, any place where one has a firm footing and can use both hands to advantage in operating the shears, but in climbing about in tall trees, the saw is most convenient. The style of long-handled pruners worked with a short lever attached to a handle eight to twelve feet long are convenient in thinning out the branches about the outside of trees that are too high for the short pruner and not readily reached with the saw from the center. If this pruner has a hook it will also serve to pull down branches that lodge in the tree. The only place an ax should be used is in trimming up trees or branches that have been cut.

For small fruits it will be desirable, in addition to hand shears, to have hedge shears for cane fruits and cane hooks for taking out old canes and surplus new ones near the ground. For strawberries, some form of rolling runner cutter is desirable to trim the runners from the edge of the rows. We have found a pair of discs attached to a two-horse cultivator to be about the best thing we have tried. The discs are held more evenly in this way than when fastened to the frame of a one-horse or hand cultivator. An old hoe with the shank straightened and the blade filed sharp is an excellent tool for clipping runners on small patches.

Spraying Equipment.

No up-to-date fruit farm can get along without some spraying equipment. If there are several hundred large trees the most economical method of spraying is with a gasoline power sprayer. For special conditions, steam, air pressure systems, or carbonic acid gas may answer for the power, but nothing has proved quite as dependable and as cheap under all conditions as the gasoline engine. The traction sprayer, which gets its power from the wheels, may answer for small trees, vineyards, and small fruits, but is hardly practical for large trees.

All power sprayers should be equipped with a tower if there are high trees, and have at least one line of hose not less than 35 feet long. The line used from the tower may be shorter, perhaps 20 feet. For small trees an eight-foot rod is convenient, for high ones a ten or twelve-foot rod. Nozzles of ample capacity, good distributing power, and non-clogging properties should be used. It is economy to have not less than 200 gallon tank capacity. I prefer the outfit mounted on medium to high wheels with fairly wide tires, as it will haul easier thus on soft ground.

For orchards of less than 100 trees, a good hand-pump with 2 or 2½-inch cylinder, mounted on a 50-gallon cask, will answer nicely if it is operated with a good man at the handle to maintain a strong and even pressure. These are convenient for small trees, and can be used for small fruits by arranging attachments to properly distribute the spray upon the plants while driving along the rows. One or two lines of hose can be used, not less than 25 feet in length, and nozzles that will scatter well. A good strainer is essential.

Where one has a large acreage of small fruits, a traction, or geared sprayer is the most economical. The potato sprayer will answer for strawberries, the vineyard sprayer for raspberries or blackberries.

Where one has only a few small trees or vines a bucket pump, or a knapsack air compression sprayer will answer.

Tools for Cultivation.

The orchardist should at least have a two-horse and a one-horse plow, a disk or cutaway harrow, a spring-tooth and a spike-tooth drag. The last two tools are now made in one and so arranged that either or both can be used at one time, which makes a very handy and useful tool. The cutaway, or disk harrow, will work up hard ground, and often answer for a plowing, and is an excellent tool for cutting up ground that has become somewhat weedy or grassy, or grew a cover crop the previous season which died down during the winter. It is often of use in cutting up sod ground before plowing. The one-horse plow is convenient in finishing up lands next to the trees, as it can be set so as to run shallow and close to the trees while the horse walks to one side. Other tools may be desirable, such



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are made in 25 different sizes and styles; prices \$3.50 to \$350. Our catalogue describes these sprayers, and shows you the best way to spray. It's free. Send for a copy. **THE HARDIE MFG. CO.** 942 Mechanic St., Hudson, Mich. also 49 No. Front St., Portland, Ore.

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Our O. K. Champion Planter makes and saves the owner money. One man and team plant five or six acres of potatoes a day accurately and easily. Learn more about this and our line of potato diggers, etc. Let us send you our free Catalog. Write today. Dealers sell our machines.

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"More Potatoes"
From ground planted secured by use of The KEYSTONE POTATO PLANTER than by any other method of planting. Work perfectly accurate. A simple, strong, durable machine. Write for CATALOG, price, etc. **A. J. PLATT, MFR.** BOX J STERLING, ILL.

SEED OATS & BARLEY—Extra fine Johnson and Horsey seed oats also seed barley, write. Lonier & Hoffer, Manchester, Mich.

FOR SALE—Oderbrucker Seed Barley, re-cleaned, \$1.00 per bushel, sacks free. **GEORGE WINEGAR**, Morrice, Michigan.

as a roller or an Acme harrow, but those mentioned above are considered more essential. One-horse cultivators are convenient in working close to young trees, as one can get closer than with a harrow and with less danger of injuring the trees.

For small fruits, in addition to the list given above, there should be a two-horse cultivator, if there is much cultivating to be done, as it will break up hard ground better than hand-cultivators and do faster work. A hand cultivator with small shovels adjustable for depth and for throwing to or from the row, is a necessity, also a spike-tooth cultivator adjustable sideways and in height by means of levers, and arranged so sweeps can be attached for cutting out weeds or grass or suckers from raspberry or blackberry rows. An adjustable spring-tooth cultivator is also very convenient.

For hand tools a good supply of sharp hoes should be in readiness. They should vary in width from three to six or seven inches, and it will be found convenient if the narrow ones have two prongs at the back for loosening the ground about strawberry or cane plants without danger of cutting roots or plants. Spades for setting and forks for digging plants, and strong hand trowels, filed sharp for layering strawberry plants, are necessities.

Harvesting and Marketing Equipment.
For harvesting orchard fruits of any kind there should be a supply of step ladders of different heights, built strong, and preferably with a three-point base so they will sit firm on uneven ground. For large trees orchard ladders made of basswood or other light material with pointed top and broad base should be provided. These should be of different lengths, adapted to the trees 16 to 20 feet is a convenient length for picking out centers and the outside of trees of medium height. Plenty of picking baskets should be provided. We fasten a double wire hook to the balls in such a way that it can not slip down and is always ready to hook on a limb. If ordinary sacks are used for apples they should be well padded where they rest on the shoulder and a piece of barrel hoop can be tacked in the mouth to keep it open. We usually use both baskets and sacks, doing the bulk of the picking in baskets, and using the sack to get scattering apples or those at the top, or where the basket will not hold all, and thus save a trip down the ladder. We have had no experience with patent picking pails or sacks, but think many of them are impractical.

Sorting tables will be needed for the larger tree fruits. Many use canvas stretched on a frame. I prefer a flat-bottomed sorting table so the apples will not run toward the center, as on a canvas. A convenient one can be made like a shallow box with sides about six inches high, and of a length and width to hold two or three barrels. This can be set on barrels in the orchard or packing shed, and a couple of blankets or a carpet thrown over it to prevent bruising the fruit. The baskets can be hung by hooks anywhere about the sides of the table.

Suitable packages, barrels, boxes, baskets, or crates, must be provided. These should be clean and of the standard size for the style of package. For soft or fancy fruit corrugated caps or cushions are almost necessary to insure a good appearance when the package is opened up. Labels are a help in selling the fruit, and give the package a business-like appearance, also an assurance as to the quality of its contents if it contains a guarantee and the address of the grower. Stencils or rubber stamps for marking variety, grade, and address are a great convenience, saving time, and add to the neat appearance of the package.

For hauling the fruit an orchard wagon or a low-down wagon with platform and bolster springs is very convenient, and the springs are essential.

For harvesting small fruits, picking stands for strawberries and carriers for cane fruits will be needed. These should hold from four to eight baskets or cups, and the fruit is set from these directly into the crates unless it is to be faced or graded, when it may be necessary to empty it on trays made of cloth stretched on a light frame. Tables should be provided in the temporary packing house in which to set the boxes for facing and packing. Labels and stamps will serve the same use as for orchard fruit. A bulletin board in a conspicuous place will assist in advertising the fruit, and the local paper should be used as a means of communicating with customers. The telephone is also a necessity.

Calhoun Co. S. B. HARTMAN.

THE WOLVERINE NURSERIES

(Grounds Southfield, Oakland County, Mich.—120 Acres.)

We make the following **GOOD OFFER** to readers of the Michigan Farmer.

Send one dollar now for a collection of 12 shrubs, mailable size. The shrubs will be sent, not at the first whisper of spring, but in seasonable planting time, about May 1st. The offer is good on all remittances prior to and on April 20th.

THESE ARE THE SHRUBS:

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| 2 Chamecerasus Roseus Grandiflorus (Up-right Honeysuckle) | 2 Spirea Van Houttei (Bridal Wreath) |
| 2 Forsythia Fortunei (Golden Bell) | 2 Symphoricarpos Vulgaris (Indian Currant) |
| 2 Lilacs (1 White; 1 Purple) | 2 Viburnum Opulus (Bush Cranberry—Edible fruit) |

The shrubs are chosen with reference to their beauty and hardiness. With care in a good soil they will give results which will be a source of pleasure for a life time.

Furthermore, and this is the reason for sending your order at once, purchasers of these 12 shrubs are eligible to compete for cash prizes, ranging from \$5 to \$15.

We refer, with permission, to the Michigan Farmer, with whom we have deposited a certified check to cover the prizes referred to, and who will announce the winners in their issue of April 29th, 1911.

CUT THIS OUT.

THE WOLVERINE NURSERIES, Room 102, 270 Woodward Ave., Detroit, Mich.
Please find enclosed one dollar for the 12 shrubs offered in the Michigan Farmer Feb. 25, 1911. Mail me particulars of Cash Prize Contest.

Name _____
Town _____
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If you would like to read about the Best Seeds that can be Grown and the Largest Mail-Order Seed Trade in the world, you should write to-day (a postal card will do) for *The 35th Anniversary Edition of THE LEADING AMERICAN SEED CATALOG*. A bright new book of 174 pages,—it is free to all who appreciate Quality in Seeds. **W. Atlee Burpee & Co., Philadelphia**
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Hardy "Blizzard Belt" FREE

Everybody likes fine strawberries, and to prove that our new GIANT variety is the largest and strongest grower, as well as the heaviest fruiter, we offer to send you TWO PLANTS (worth 30 cents) absolutely FREE. We have picked 12 quarts of fine berries from a test bed grown from but two GIANT plants set the year before. You can do as well, and at the same time raise young plants for a new bed. If you care to send 10 cents for mailing expense, we will add 6 BABY EVERGREENS 2 years old, and send all to you at proper planting time in the spring. It will pay you to get acquainted with our "HARDY BLIZZARD BELT" Trees and Plants. Write to-day and we will reserve the plants for you and send you our catalog by next mail. Address **THE GARDNER NURSERY CO., Box 354, Osage, Iowa**

"3 in 1" Red Raspberry Herbert

Hardest of all Reds and Heaviest Yields of All

205 Bushels to the Acre—Cuthbert only Averages 56

Description of The Herbert Raspberry

By Prof. W. T. Macoun, of Ottawa

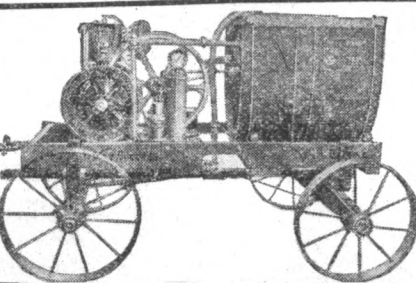
HERBERT (No. 17)—A chance seedling, originating with R. B. Whyte, Ottawa, Canada, in 1887. One of 30 seedlings, probably of Clarke. A very strong grower, hardy and very productive. Fruit large to very large, obtusely conical, bright to rather dark red; drupes medium size, not crumbling; moderately firm; sweet and sub-acid, sprightly, juicy and of good flavor. Quality very good. Season begins a few days before Cuthbert. The best red raspberry tested here. It has all the good points required in a berry for local market, being hardy, vigorous, productive, with fruit of large size, good color and very good quality. WE ARE growing this berry largely in U. S. and Canada. Prices quoted for shipment in either country, free of duty. Address us **BROWN'S NURSERIES, Ontario, Canada.**

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THE "New Way" "SUCCESS"

Twin Cylinder Power Sprayer

Light Weight High Pressure Detachable Engine

Save Your Fruit—It Pays

Write Now for "Success" Catalog No. "C."

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LANSING, MICHIGAN, U.S.A.

\$400 PROFIT PER ACRE

What one man did with 2 1/2 acres of Hunkel's Cream City Tomatoes—the first large tomato to ripen.

HUNKEL'S "CREAM CITY" TOMATOES are of a thick, solid flesh with few seeds. Splendid shippers—do not crack or rot. Tomato experts agree they are the most profitable tomato grown for market gardening or truck farming and unsurpassed for canning. Seeds per pkg., 10c; 25c; 1/2 lb., 75c; 1 lb., \$2.50. Write for free 1911 catalog of our full line of vegetable, flower and farm seeds. **G. H. HUNKEL CO., Seedsmen** 367 Chestnut St., Milwaukee, Wis.

SPRAY FRUITS AND FIELD CROPS

and do whitewashing in most effective, economical, rapid way. Satisfaction guaranteed. **BROWN'S**

HAND OR Auto-Sprays

No. 1, shown here, is fitted with Auto-Pop Nozzle—does work of 3 ordinary sprayers. Endorsed by Experiment Stations and 300,000 others. 40 styles and sizes of hand and power sprayers—also prices and valuable spraying guide in our Free Book. Write postal now.

THE E. C. BROWN COMPANY
32 Jay St., Rochester, N. Y.

Seed Corn and Oats For Sale—Early Yellow Dent Swedish Select, Golden Fleece Corp. Regenerated. The best varieties. Write for samples, prices and circular. **F. A. BYWATER**, Memphis, Michigan.

BETTER FRUIT TREE INSPECTION

Simultaneously, but more or less independently, calls have come and are coming from nearly all sections of Michigan for a better system of inspection of our fruit trees. These calls are almost without exception, prefaced with respect for the work of our state inspector and his corps of district men. It has been learned, however, (and the information has been secured at a high-cost), that the force now provided for by statute to carry out the local field work, is inadequate, either in efficiency or in numbers, and is not brought in close enough relation with the state men. The people who have orchards that are being threatened by the ignorance or indifference of neighbors, see that their chances for continued prosperity in the fruit business depends upon a better performance of inspection work. The vigorous note in the resolution adopted by the State Association of Farmers' Clubs, the action of horticultural societies and agricultural associations, bear strong evidence of the awakening of the people to a realization of an impending danger. There are thousands of farmers in Michigan, in spite of the vast amount of preaching at institutes and farmers' gatherings and the effort of the press to instruct, who cannot distinguish between a San Jose scale and the larva of a cod-lin moth, and it is because of this ignorance that the danger is near. We need a system of inspection that will bring the work of every section in touch with the state inspectors. A large number of the township inspectors are efficient, conscientious men who know their duty and who perform it fearlessly; but there is a larger number, whose chief duty appears to be to send in their bill for services not rendered, and whose qualifications for the work lies more particularly in an ability to "make good" on the first Monday of April or the Tuesday after the first Monday in November. Men from Oregon declare that they are working under an efficient system; California is another state where it is claimed that good results are being secured. If they can do it, why not Michigan? Is not the matter of sufficient import to the state at large and to the fruit growers and the farmers in particular, to solicit a few hours' attention of our law-makers at Lansing this winter? Our representatives and senators have a thousand and one things (some important and others trivial), forced upon their time by men who want something done, and these men are willing to give of their time to write and go to the capitol to impress the necessity of the situation upon the minds of your and other senators and representatives. A few thousand letters from the people "back home" are marvelously potent in making issues important upon the floor of our legislative assemblies. If you do not make a noise they will not be concerned, so let your representatives know plainly how you stand upon this matter.

EATON COUNTY FRUIT GROWERS ORGANIZE.

Watch Eaton county. Her fruit growers have gotten together. They feel that destiny holds something else for that political division of the state than a monotonous general farming program. Some of her fruit men have been making money. These men, with others who want to make money, feel that the business can be made more profitable if matters are talked over. They have planned to do this very thing. They have planned that cultural methods might be discussed, that spraying, pruning, harvesting, storage and distribution are topics about which they will be better informed. The men upon whom the burden of starting the work of the organization has fallen are: C. M. Hunt, Eaton Rapids, president; Levi Wilton, Charlotte, vice-president; Frank Ford, Eaton Rapids, secretary; F. A. Warner, Vermontville, treasurer. The initial meeting was held early this month, and at that time, among other excellent addresses, Mr. Dow, the newly elected horticultural superintendent of the state fair, gave a vigorous talk upon practical apple culture. It was a fitting start and we hope that the purpose of the association will always be promoted.

In answering the question as to whether color is of more importance than flavor in marketing apples, 61 per cent of the answers from the United States were affirmative and 31 per cent negative, while in Great Britain 48 per cent said yes and 49 per cent no. We see from this that Great Britain is giving more attention to flavor than are we.

Fruit Sprayed with Bowker's "Pyrox"

brings more money because it is free from injury by worms, scab, etc. Over 300 testimonials in our new catalogue show the great value of this preparation on all kinds of fruits and vegetables. Pyrox serves two purposes; it kills insects and prevents disease and blemish. It adheres to the foliage even through heavy rains, saving labor and cost of re-spraying. Perfectly safe. It is all ready to use by mixing with cold water. Every grower who seeks fruit and vegetables free from blemish needs "Pyrox," the "one best spray." It

"Fills the barrel with the kind they used to put on Top"

Send for new catalogue with photograph of sprayed and unsprayed fruit in original colors. Will convince the most skeptical. Say how many and what kinds of fruit trees, or how many acres of potatoes you have to spray, and ask for special prices. We ship from Boston, Baltimore, and Cincinnati.

BOWKER INSECTICIDE COMPANY,
43 CHATHAM STREET, BOSTON, MASS.



ISBELL'S JOHNSON OATS

ISBELL'S NEW JOHNSON OATS

VERY PRODUCTIVE THIN HULL **HEAVY GRAIN STIFF STRAW**

Johnson Oats originated here in Michigan and we have many testimonials attesting to their value. The heads are large and branching and loaded with big, plump, thin-hulled and bright grain. Its roots run deep into the soil, thus supplying the plant with moisture and food even in a dry season. It stools out and a single plant produces a number of large heads. It is plump and heavy, often weighing 36 to 40 lbs. to the bushel. The straw is very stiff and of medium height, holding up its large, well filled heads on the richest ground when other varieties lie flat. "The Johnson" are not side Oats. The money you invest in the Johnson Oats for seed will yield a profit of 100 to 200 per cent in the increased yield you will get over the common kind you have been planting. The extra cost of the seed of the Johnson over common Oats is so light that no one can afford to plant the common varieties. A change of seed once in 2 or 3 years is absolutely essential to growing good crops and when a change is made get the best variety possible. The Johnson will fill the bill every time. Prices by mail, postpaid: Pkt., 4c; qt., 18c; 3 qts., 45c. Not pre-paid: Qt., 10c; 1/2 pk., 18c; pk., 30c; bu., \$1.00; in lots of 2 1/2 to 10 bus., at 95c; 10 bus. or more, at 92c per bu., bags free. Freight to be paid by customer. **Elegant 104 page Seed Annual FREE.**

S. M. ISBELL CO. SEEDSMEN JACKSON, MICH. BOX 666



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raised in Southern Alabama, Western Florida and along the Gulf Coast, with shipping season commencing early in March, and commanding from \$2.00 to \$2.50 per crate at shipping point. This same land then planted in sweet potatoes will yield \$100 to \$150 per acre, and, in addition, an excellent forage crop, making

3 Crops a Season From Same Land

No long winters, but an average of 312 working days a year. Stock needs little protection and thrives on grazing alone and with an abundance of good water. Send for our booklets and read of the actual experiences of former Northern and Western farmers who are rapidly becoming rich off the fertile lands of Alabama, Georgia, Tennessee, Mississippi and Western Florida.

Low round-trip rates 1st and 3d Tuesdays each month

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Diamond Joe's Big White—A strictly new variety. None like it. It is the Earliest and Best Big White Corn in the World—Because it was bred for most Big Bushels, not fancy show points; because grown from thoroughbred inherited stock; every stalk bears one or more good ears, because scientifically handled, thoroughly dried and properly cured and had the most rigid examination. Big Seed Catalog FREE. It tells about all best farm, grass, garden and flower seeds grown. Write for it today.

Address, **RATEKIN'S SEED HOUSE, Shenandoah, Iowa**



COFFEE ONE CENT PER POUND

Salzer's French Bean Coffee

(SOJA HISPIDA)

A wholesome drink! The healthiest ever; you can grow it in your own garden on a small patch 10 feet by 10, producing 50 lbs. or more. Ripens in Wisconsin in 90 days. Used in great quantities in France, Germany and all over Europe.

Send 15 cents in stamps and we will mail you a package giving full culture directions, as also our Mammoth seed catalog free; or send \$1 cents and get, in addition to above, 10,000 kernels unsurpassable vegetable and flower seeds—enough for bushels of luscious, different vegetables and brilliant flowers.

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Let us help you double your corn crop this year—with the same acreage and same method of cultivation. We can furnish extra early varieties suited for culture in northern latitudes, which are of much stronger growth, better vitality and more productive than varieties grown there. Our seed corn is good enough to give a bond for.

Write for FREE SAMPLES and \$10,000 Bond Proposition

It's the greatest seed corn offer ever made and absolutely protects you against poor quality. Fully explained in our Special Seed Corn Circular and large illustrated catalog of farm and garden seeds which will be sent free on request. Address:

IOWA SEED COMPANY,
Dept. 48, Des Moines, Ia.

SCARFF'S GOOD SEED CORN

We sold over 11,000 bushels of it last year, and we expect to double it this year. Your money back if corn is not satisfactory. 10 days to test it. Can send either shelled or in the ear. Also choice lot of seed oats, barley, speltz, timothy and potatoes. We cannot tell you more about it here, but our catalog is free. Send for it to-day.

W. N. SCARFF, New Carlisle, Ohio

OATS

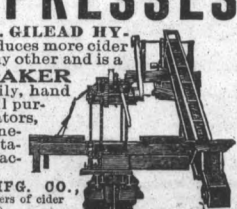
NEW SEED OATS. Big money in right kind of oats. Here's your chance. Imported Canadian seed oats, raised on Galloway Brothers' big farm in Canada. New, clean land. Regenerated Swedish Select went 116 bushels to acre. Early New Market 116 bushels to acre. Farmers who bought this seed from us last year raised as high as 75 to 100 bushels in this country, and found out their old seed was infested and run out. Change your seed. Try some of this new seed. Send for free sample, or 10 cents for large packet. Will also send our free booklet, entitled "Big Money in Oats and How to Grow Them." **Galloway Bros., Bowman Company**

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HYDRAULIC PRESS MFG. CO.,
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Woman and Her Needs At Home and Elsewhere



Help Usually Comes When We Do Not Need It.

ONE of the hardest sayings of Jesus, to me, used to be, "To him that hath shall be given and he shall have abundance; but from him that hath not shall be taken away even that which he hath." I could not reconcile this with the idea of perfect love and justice, to command that those who had no need should be helped while those who were needy should be pushed farther down. As I grew older, however, I came to see that it was not a command, but simply a reflection on human character. And observation has shown me what a perfectly true comment it is.

Just as an illustration, take the case of the man who is making a hard fight to get a start in the world. He is working with might and main against tremendous difficulties and everybody knows he is in a tight place. How much help does he get? Not a particle. Pocketbooks suddenly grow empty if he asks for a loan, and he is piously told that the "Lord helps him who helps himself," meaning, I suppose, that help only comes to them who show they can get along without it. But let the same man get on his feet, let him get in a position where he doesn't need aid from anyone, and people come around offering assistance. He could borrow money from any one, just because everyone knows that he now has plenty and could pay back. People make him expensive presents, who, when he was needy, wouldn't have given him a loaf of bread. He now has, so to him shall be given, that he may have abundance.

Then there is the case of widows. Let a woman be left unprovided for, with perhaps two or three children, and how many good offers of marriage does she have? The men of her acquaintance, sensible creatures, are too wise to saddle themselves with the care of "a ready-

made family," so they ride away in search of a woman who doesn't need financial help, and leave the poor woman to take in washings to support herself and babies. But let another woman be left a widow with a life insurance and no children, and every man in the community wants to tell her how to spend her money. She is besieged daily by suitors and almost forced to marry one of them for self-protection.

A noted business firm went into bankruptcy. Before the failure they had unlimited credit. Now that they have started up in business again they can not get credit at all and some firms even refuse to sell to them for cash!

A girl comes to the city from the country, friendless and alone. She is, perhaps, plain, unattractive and poor. She is lonely and heartsick and longs for friendship, but people shy away. They see she has no friends and make no attempt to befriend her. But let her change her tactics. Let her make a pretense of being popular, of being invited out a great deal and let her throw out a few hints that she has many admirers, and people begin to notice her. They decide that she isn't so uninteresting after all and in less than no time she finds herself surrounded by friends, so-called. At least they may be pleasant acquaintances, which is all she wants.

So I have learned to see the truth in the words, "from him that hath not shall be taken even what he hath." It is not that this is the divine order, it is simply that we selfish humans are too shortsighted to see that there is a better way. But when we learn that the time to help is when help is needed, the old order will have been wiped out and the millennium will be here.

DEBORAH.

LAUNDRY HELPS.

BY RUTH RAYMOND.

First to consider in getting the weekly washing ready is the water. There should be plenty of good soft water, plenty of good soap and plenty of sunshine. Cistern water is always soft water but is liable to contain dust and dirt from the roof, while well water is quite apt to be hard water. Hard water may be softened by using sal-soda with it.

Washing soda should be dissolved before using and then used in moderation. Make a solution by using a half pound of the soda to a half gallon of hot water. One pint of this solution in a tub of water is sufficient, stir this well in the tub before putting in the clothes. Borax is very good to whiten clothes. Use a tablespoonful of powdered borax to a boiler full of water. Borax should always be used in washing colored clothes and delicate fabrics.

It is best to buy pure ammonia at the drug store and dilute it with water when needed for the laundry. It is much cheaper and goes farther than household ammonia.

Turpentine is fine for use in washing silks. Use in proportion of three tablespoonfuls to a gallon of water.

Fruit stains should be removed when fresh, by turning hot water through the material where the stain is. Boiling hot milk will remove wine stains. Place the stained fabric over a bowl and turn the milk through. Coffee, tea, and chocolate stains may first be soaked in cold water then sprinkled with powdered borax and left to dry, then use clear hot water without soap, which would set the color. Blood stains should be first soaked in tepid water and afterwards washed with soap and hot water. Remove fresh grass stains with ammonia and water. For old stains use alcohol. For mildew apply a paste made of soft soap and salt, and place the garment in the sunshine; a second application may be necessary.

It is best to soak the white clothes over night. This may be done by soaping the dirty pieces, rolling the garment separately and laying them in a tub of cold water.

After rubbing out the clothes in fresh,

warm water in the morning, they may be boiled for 15 minutes. Rinsing well is always necessary, then hang in the sun to dry.

Woolen goods should be washed with great care, using the soap in solution, and sparingly. Use warm water bath for rubbing and rinsing. Never hang the woollens where they will freeze.

Salt or alum may be used to set the color of colored clothes, either cotton or woolen.

HOME HELPS FOR YOUNG PEOPLE.

BY MRS. FRED NISEWANGER.

On almost every hand there are complaints concerning our modern school-system, both town and rural. Criticisms and opinions vary according to location and environment but the tone is similar, and superintendents, school-boards, teachers and parents are all blamed at some time.

Pupils are hurried too much—or they are not progressing fast enough; school-rooms are too crowded for good individual work—or there are not enough pupils for healthy competition and advancement. Teachers are accused of teaching merely for wages and pupils of skimming merely the surface for grades.

Something is wrong somewhere and too little is ideal anywhere. Certainly, there is no little child attending school that would not be helped for all future, as well as the present time, by a judicious course of supplementary work at home.

I do not mean that pupils of any grade should do a lot of actual studying outside of school hours; they need change and recreation then. A mere mind stuffing, or whatever we mean when we commonly say, "education" is not everything. Strong, correctly-developed bodies are more, for a healthy brain development is rarely possible unless preceded and accompanied by a healthy body, but particularly with the younger grades, it is easy and profitable to supplement their actual school work with progressive play and easy work at home.

There are different games that aid greatly in acquiring speed and accuracy

along various mental lines and are always enjoyed for evening pastimes, especially if father and mother join in them. For instance, dominoes and spinette will, unconsciously, be of great aid to number work, sliced maps to geography work, and anagrams to spelling and language. A home-made blackboard, equipped with both white and colored crayons, is a delightful aid for penmanship and the various kinds of drawing and rubber-vacuum target games train both eye and hand.

Personally, we are very fortunately situated for the study of botany and geography and both parents and children have spent many pleasant and profitable, though necessarily scattered, hours getting acquainted with the plant world in yard, garden, fields and woods and with some of the forms of mother earth at the river and in the hills. For example: When the children studied land and water formations in their geographies, we took a lunch and spent half a day near the Big Muddy. The river, with its banks, draws, cut-offs, pools, sand bars and sand heaps, illustrated the various forms nicely; we also made miniature worlds, states, valleys, mountain systems, islands, etc., in its sand-drifts. When they were studying mountain systems, canons, cliffs, etc., we spent a day picnicing in a range of hills six miles away, spending a number of delightful hours and firmly impressing numberless useful lessons. A load of gravel brought from these same hills and dumped in the back yard was full of possibilities along the same line.

A busy mother has not a great deal of time to sit down and read to her children but almost every day, a little time—perhaps the bed-time hour—may be devoted to interesting and good reading that will instruct and create a liking for the right sort of book entertainment. Some of our favorites are "The Fairyland of Science," "Stories of the Universe," "Our Shy Neighbors," "Plants and Their Children," and various geographical and historical readers. Our book companies will gladly send illustrated catalogues and personal letters of valuable suggestions upon request. The books mentioned are more strictly along the line of school-work, but mythology, fairy-lore and poetry hold quite as valuable places.

No more certainly anywhere, than in educational work, does the young tree grow as the twig inclines, and it pays to take a little time at home to supplement the work of the best teachers and schools and to fill in some of the gaps left by the poor ones. Attend to this in the early years and the more developed boys and girls will the better take care of themselves and advance credibly even in the face of discouraging surroundings.

HEALTH NOTES.

BY CHARLOTTE A. AIKENS.

In elderly people who have poor teeth a good deal of digestive difficulty may be traced to the habit of soaking bread toast and such foods in tea or coffee. This relieves them of the necessity of chewing such food, but it means that the saliva which nature intended to have a large part in the digestion of starchy foods is not mixed with the food. The food softened by the tea, is quickly swallowed, with very little saliva. The stomach juices have little or no effect on starches, hence the food, though simple, ferments in the stomach and causes flatulency, bloating and general distress.

For a first aid treatment for superficial burns the old-fashioned remedy, a heaping teaspoonful of baking soda to a glass of water used to saturate soft clean clothes covering the wound, is one of the best. After the sharp pain is over the wound should be dressed with vaseline or some other simple soothing ointment. When a large area of flesh is burned, as occasionally happens when a child is accidentally scalded, the immediate danger is that the little one may succumb from shock. After the danger from shock is passed the chief danger is from infection as the result of careless handling or of unclean dressings. The home nurse's fingers, when handling the dressings may easily carry infection to such a wound.

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Make a plain syrup by mixing one pint of granulated sugar and ½ pint of warm water and stir for two minutes. Put 2½ ounces of pure Pinex (fifty cents' worth) in a pint bottle, and fill it up with the Sugar Syrup. This gives you a family supply of the best cough syrup at a saving of \$2. It never spoils. Take a teaspoonful every one, two or three hours.

The effectiveness of this simple remedy is surprising. It seems to take hold instantly, and will usually stop the most obstinate cough in 24 hours. It tones up the jaded appetite and is just laxative enough to be helpful in a cough, and has a pleasing taste. Also excellent for bronchial trouble, throat tickle, sore lungs and asthma, and an unequalled remedy for whooping cough.

This recipe for making cough remedy with Pinex and Sugar Syrup (or strained honey) is a prime favorite in thousands of homes in the United States and Canada. The plan has been imitated, though never successfully. If you try it, use only genuine Pinex, which is the most valuable concentrated compound of Norway white pine extract, and is rich in gualic acid and all the natural healing pine elements. Other preparations will not work in this recipe.

A guarantee of absolute satisfaction, or money promptly refunded, goes with this recipe. Your druggist has Pinex or will get it for you. If not, send to The Pinex Co., 232 Main St., Ft. Wayne, Ind.

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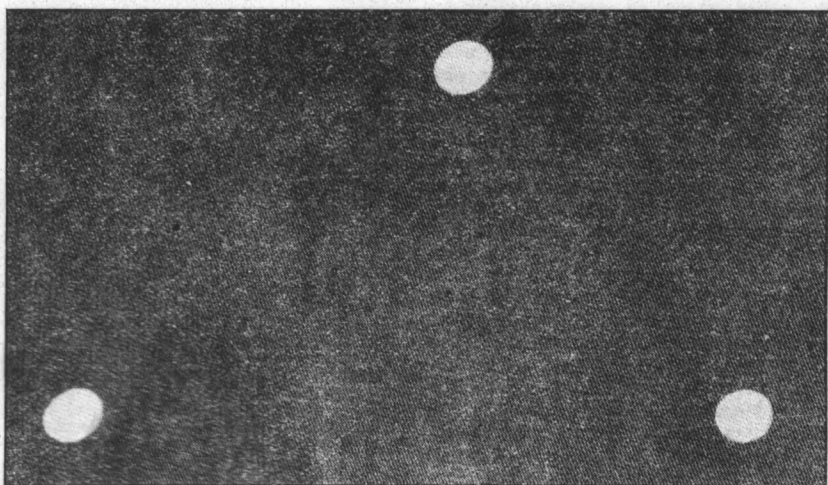
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Foulards are to Rein in Silks, Sheer Effects in Cottons.—By A. L. L.

SHEER materials are to be "the thing" next summer, this is the verdict of fashionmakers. So, if we are to be capable housekeepers and keep our work up to the minute, we must devote our time to the making of transparent dresses and waists, while the snows and winds of February send chills to our very marrow. Cotton voiles are to be good, they say, Irish dimities and cottons in foulard effects, while the heavier lin-

You must have your gowns one-piece if you are to be in the fashion at all, and elbow sleeves are about the only thing seen. The silk gowns have the short sleeves as well as the lingerie. Side closings, with a row of small buttons down bodice and skirt are much seen, and white lace and net yokes are still good. Many lingerie gowns are made almost entirely of lace and embroidery combined, with not more than a half yard of muslin



Blue Foulard with White Dots, (Natural Size).

ens and poplins are to be relegated to the attic until Fashion's wheel takes another turn.

Foulard seems to be the only thing that shopkeepers know this spring. It is the first thing they show you in silk, and the first thing they mention in cotton, for, while it is the name of a certain sort of silk, the foulard patterns are copied in cotton goods and in a silk and cotton mixture. Irish dimity in foulard patterns has a queer look, but it is to be a popular fabric if the eloquence of shopkeepers can make it so.

Ginghams, of course, are always good, and both French and Scotch ginghams are being shown. They are in the usual patterns, with blue a leading color. Blue is the leading color in everything though, possibly, because it is an ideal summer color. Red looks so hot, pink is too girlish, brown is worn to death every winter, and green is unbecoming to so many women that really, blue is about the only thing every woman can cling to for summer wear.

Ginghams 32 in. wide are sold for 15c a yard in domestic cloths, while for the French and Scotch varieties 25 cents a yard is asked. The silk and cotton foulards, which promise to be strong in favor, are sold for 25, 29 and 39 cents.

The silk foulards come in two especially strong patterns, though, of course, there are many others. These are the bordered foulards and the foulards covered with zig zaggy lines as seen in the illustration accompanying this article. The bordered foulards come in many styles, plain grounds with a border of contrasting color, striped foulards with a solid border of one of these colors, polka dot grounds with solid borders, etc. These silks are 46 inches wide, so, while they cost more the yard than the narrow silks, a gown of one of these patterns would not cost much more, as the width of the silk does for the length of the skirt. For a young woman nothing would be prettier than a foulard in blue with white polka dots and a solid blue border. Black and white stripes with a black border is effective for an older woman.

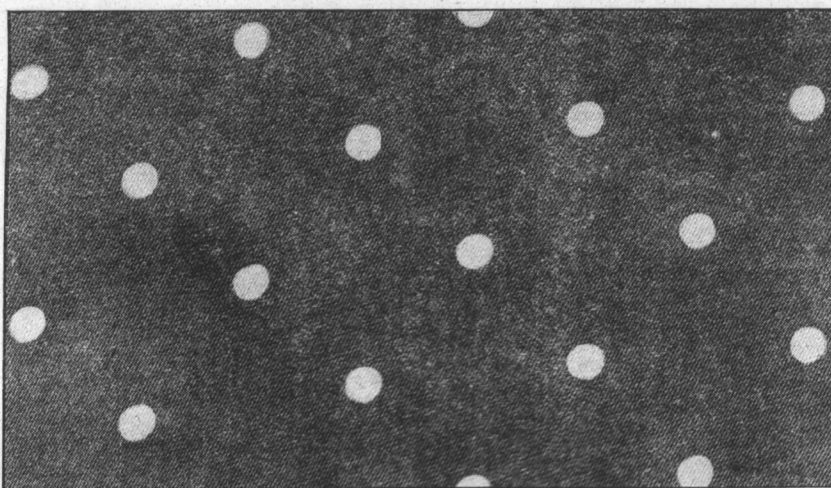
Though the men who sell goods by the yard tell you linen will not be worn to any extent, a smart shop is showing a linen suit which no woman can look at without wanting to own or to copy. It is a one-piece gown of extremely coarse weave linen and is hand-embroidered all over in alternate dots of solid and eyelet embroidery. The side panels from armholes to the bottom, are a wide band of very heavy Irish point lace. The yoke and elbow sleeves are of the same lace and a band of lace trims the skirt just below the knees. For wear with this is a short jacket of the embroidered linen and lace. The lace forms a yoke in the jacket, trims the fronts and bottoms, and finishes short sleeve-caps of linen. It might be copied by the woman who embroiders quickly, by using torchon lace instead of Irish point, thus making the suit much cheaper.

in the form of insets showing in the whole gown. This is a decided contrast to the muslin gowns with insets of lace and embroidery. Pure white eyelet embroidery combined with cream lace, was used in one gown, and at least had the element of being "different."

A WINTER VACATION IN THE SOUTH.

BY HILDA RICHMOND.

For those farmers and their wives who are too busy during the summer and fall



Foulard with Dots Smaller and More Numerous, (Natural Size).

for vacations, a winter trip to the south offers many inducements. Especially does it look enticing to elderly men and women who desire to escape the rigors of January and February, for what young people delight in in the way of cold, middle aged persons are apt to shrink from. If there can be but one vacation time in the year, and that must be in the winter, a trip to the southern part of our country is one of the best that can possibly be taken.

Where the seaboard can easily and quickly be reached there are many opportunities to go by boat to Florida and other southern states, but even a railroad journey is not very expensive, and after one is there it is possible to live almost as inexpensively as at home. And, since everybody expects to spend more on a vacation trip than at home, the cost will not worry any prosperous farmer. The railroad agent will furnish you with maps, guide books and information as to rates, and many people get so much enjoyment out of the planning, the trip and the memories of the happy sunny days "Down South," that the vacation almost lasts the year round.

Whatever state or locality is chosen it is well to avoid the beaten track of the tourist, for there are plenty of people who have no visible means of support in the south but "doing" the northerners. Away from the fashionable resorts, with their fine hotels, "made" scenery, expensive

amusements and their excessive rates, are sleepy, quaint little towns where one can see life as it was in war time, almost, so conservative are the inhabitants. And there one can live at a reasonable rate and enjoy the climate quite as well as at Palm Beach or the palaces strung along at the coast resorts.

Whether interior or coast is chosen, there are enough interesting and profitable sights to occupy many weeks, for turpentine forests, sugar cane plantations, orange groves, pineapple plantations, truck raising in January, peanut culture and a dozen and one other industries are new to the northern farmer and all within easy walking distance of the little towns. Then there are the always entertaining people, with their slow, easy-going ways and their perfect willingness to put things off till tomorrow, that would set a northerner distracted, but which is entirely in keeping with the surroundings down south. Of course, cotton picking is over but other crops are in their prime, and a farmer is always interested in things pertaining to his calling.

The means of transportation, from the lazy mule, with its wonderful rope harness to the leisurely steamboats on the rivers, are all new and entertaining to the farmer. For a small amount he may explore the towns along the rivers and see the typical southerner, and for nothing at all he may hunt and fish, unless there be a state license to outsiders. Such fish and oysters and game as are plentiful in the southern states! A man staying in a secluded corner of Georgia wrote home a few days ago that several men went out, and in one night caught twenty animals, including coons, possums and rabbits. Wild turkeys are plentiful in some sections and quail so numerous as to be "little thought of." With fish and game so abundant it is no wonder there are many farmers and their wives doing light housekeeping every winter in the south, for, in spite of all that is said about southern cookery, the average "Yankee" housewife secretly or openly pronounces it far beneath her own.

Of course, the best part of any vacation is the going home, and the farmer and his wife turn their steps northward at the

lovely, sunny climate on the southern part of our country in the dead of winter, so much the better. They will find interesting and amusing and instructive sights and sounds wherever they go, and when they get home they will be perfectly certain that there is but one spot in all the wide world that is worth while as an all the year residence, and that is their own beautiful farm.

THE LETTER BOX.

Dear Deborah:—Your ideas concerning dish-washing are mine exactly. I have always been very particular about how the dishes were done, but I have never had a girl or woman work who would be persuaded to do it right. One washed all the dishes and the stove with the same cloth. Another simply would not wash the teakettle. One always hung the dish cloth (she only used one), over the dishpan to dry. Some do not seem to care if they never rinse a dish and some will not remove the crumbs and food by properly scraping. Now, I have two daughters, eight and 12 years respectively, and they have nearly all these faults in greater or less degree. I have talked and punished until it is no use whatever. The older one will not wash them clean, the little one will not wipe them dry. I thought I would teach them the right way and they would always do that way. I have had a whole lot to say about how other girls did but I find to my sorrow that the mothers are not entirely to blame, though I have known many who were no better than their daughters. What would you do about it?—Mrs. F. L. S.

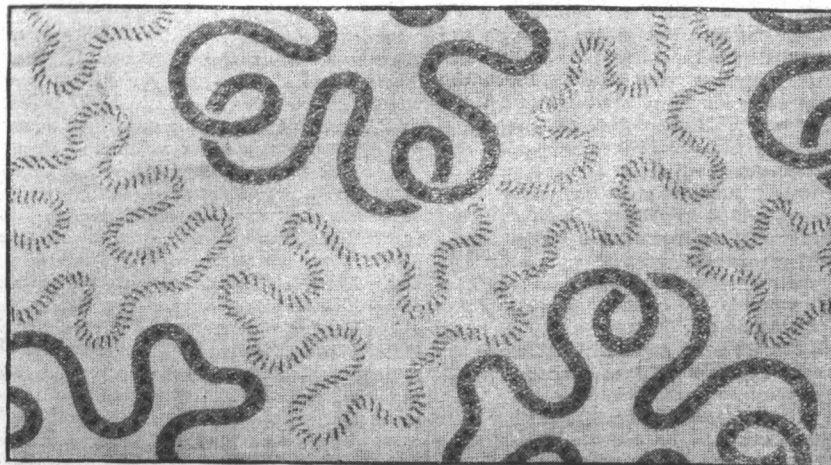
I am afraid there is nothing you can do except to "keep everlastingly at it." Children do not learn by once telling, they must be told over and over again and often forced to do their work right. The teacher I quoted simply has to inspect every dish before it goes into the cupboard and if it is not satisfactory she compels the girl to do it over again. If you do this every meal time I think you will wear the girls out. They will think they might better do things the right way the first time. You can not do it one day and the next let things go. "Eternal vigilance is the price of safety," and it is also the price we must pay for well trained children.

SWINGING SHELVES.

BY L. M. THORNTON.

If you have never learned the value of swinging shelves the first purchase made should be a ball of heavy wire and the necessary length of thin boards. In the cellar where, despite the vigilance of cats and traps and poison, mice and rats will congregate, protection from their depredations is secured by placing food-stuffs on a swinging shelf and leaving the would-be feasters to look up with hungry eyes. To make the shelf, bore two holes in either end of a wide board or fasten two boards together to secured the desired width. Through these holes thread heavy wire and fasten the upper ends of the wire to the beams overhead. If necessary drive a nail into the board and clinch it over the wire to prevent its slipping and destroying the stability of the shelf. Place all foods upon this shelf and rats and mice being unable to climb down the wires or jump from the floor to the shelf, are cheated of their feasts.

A swinging shelf on a back porch is also desirable. Make it in the same manner as the one for the cellar and hang it at one end of the open porch. Then, when pies, cakes, or sauce is taken from the stove set on this shelf to cool and there will be no danger of their becoming food



Another Attractive Design.

for the family cat, the chickens or the hungry small boy or girl.

When the swinging shelf is being made there may be some wire left and this the man of the house will utilize as a swinging perch for the hen house. The greatest pest with which the poultry man has to contend is the small white louse, that hangs close to the side of the building all day and at night runs along the perch to feast upon the chickens as they sleep.

To make a swinging perch, fasten the pole upon which the chickens are to roost, to the upper timbers of the chicken house in the same way as the shelf was fastened. After the wires are in place cover them with a coating of tar and the fowls can rest undisturbed while the white lice die of starvation or meet death while attempting to ford the tar.

POT-PLANTS—FOR BEDDING, AND NEXT WINTER'S BLOOM.

BY PEARLE WHITE M'COWAN.

All young plants and seedlings started in the house, yes, and also the old plants, should be gradually "hardened off" before setting out of doors. This may be done by placing them out on a sheltered porch on pleasant days. When they can stay out doors all day without wilting they are ready to be set out as soon as the ground is warm enough.

If some of the old plants are not doing well it is better to slip them and start afresh for the house, while the old plant will often receive a new lease of life if bedded out, and be a thing of beauty throughout the summer. Permanent pot and tub plants will be better for a summer's outing, where, from the magic of sunshine and showers they gain more than from months of care and artificial fertilizing in the house.

When it is desired to set them out in the ground, pot and all, it is wise to dig a hole a little deeper than the dish containing the plant, and into this hole place two inches of fresh ashes upon which the pot is set. This is a sure preventive for the ever present angle worm who will otherwise be sure to enter the pot through the tiny hole at the bottom and do serious injury to the roots.

Choice plants should not be moved out of doors until settled warm weather, whether it be June or July.

Few know what a brilliant showing an impatiens makes in a flower bed, but like the others, it should be gradually hardened off before bedding out and never placed in the ground until all danger from frost is over, as it is a very tender plant. Give each plant plenty of room.

Probably the best time to remove weeds is just after a shower but during the dry seasons one cannot wait for showers or the weeds will gain a foothold and absorb all the moisture so much needed for the plants.

If there is an abundant supply of water which can be applied with a hose and nozzle, the flower beds are pretty in the shape of a mound, but where the water supply is limited and must be carried, it is wisest to make them a trifle lower than the surrounding lawn. When planted in this latter way the water may be applied just where it is most needed and it will not run off upon the lawn. However, it is well to remember that if watering is once begun it will have to be kept up during the entire season, but if one has the time and strength, and plenty of water, they will be well rewarded by a profusion of lovely blossoms.

Select a few of the nicest geraniums to save for next winter. An old geranium properly summered, will produce more blossoms next winter than a young one. In either case, from those saved for winter's blossoms all trusses of buds formed during the summer should be carefully removed as soon as they appear. A plant cannot blossom continuously the whole year through.

For blooms, use moderately small pots, but if an abundance of rich foliage is desired, use larger ones. Tall, spindling geraniums, abutilons, etc., may be made to branch out by simply pinching out the small leaf buds appearing on the end of stalks. Nothing affords more pleasure in winter than one or two new specimens—something before untried. Mailing-size plants may now be purchased very cheaply. Geraniums, cinerarias, primroses, etc., may be successfully raised from seed. Geraniums set in good rich soil when they are large enough to transplant, two inches high, will blossom in from six to eight months, and one is apt to get several good new varieties in this way.

Cinerarias will make a brilliant display when the big leaves are surmounted by

panicles of very bright, daisy-like flowers, one good specimen lighting up a whole window. But they must not be kept in hot rooms, and one must wage a ceaseless war with the aphids.

One lady makes a nice little sum of pin money every spring by selling the budding and blossoming primroses which she has raised from seed. Her windows during the late winter and very early spring are full of tempting bright little flower faces nodding good wishes to passersby with such excellent results that they are sold without one bit of trouble. Geraniums germinate in from ten to twelve days. Cinerarias in from five to eight days, while primroses require from fifteen to twenty days.

Many use tin cans for potting plants and some whose plants are really lovely use all sorts of old receptacles for them. Tin cans are all right if a hole is punched in the bottom for drainage, but why not invest in ten cents worth of paint and let the plants have neat, clean abiding places? Green, or a soft brown, are probably the best colors for plant dishes.

A pretty little conceit is to sow a few seeds of clover or blue grass in with the callas or any of the tall varieties, and with the callas or any of the tall varieties, and with the addition of a pretty stone or shell even the lower part of the plant is made attractive. Just a word about crowding. Two or three, or even one, really nice specimen, in an attractive setting, makes a much prettier display than a whole window full of plants crowded so closely that each loses its individuality, and cannot attain its best growth.

SHORT CUTS TO HOUSEKEEPING.

For carbolic acid burn, bathe with milk.—A. K.

To make holders for irons and to be used during cooking, take a piece of an old bedspread 4x20 inches and fold to five thicknesses, over-cast edges, put a small brass ring in one corner for a hanger.—R. M. C.

To mend small holes or cracks in overshoes secure from a dentist a small piece of rubber dam cloth, such as is used to guard teeth from moisture while fillings are being placed. Cut this in small pieces and soak in a little chloroform in a tightly corked bottle until it becomes pasty. Pour a few drops over the hole and spread it evenly with a small stick. As the chloroform evaporates the rubber will be left in a thin coating over the crack or hole.—L. M. T.

THE FARMER PATTERNS.

These patterns may be secured from the Michigan Farmer. In ordering be sure to give number and size.

No. 4789—Ladies' Shirt Waist.—Six sizes, 32 to 42 inches bust measure. For



36 bust it requires 3½ yards, 27 inches wide. Price 15 cents.

No. 3131—Girls' Sailor Costume.—Four sizes, 6 to 12 years. For 8 years it requires 3 yards 44 inches wide; 10 yards of braid. Price 15 cents.

No. 4797—Ladies' Corset Cover.—Seven sizes, 32 to 44 inches bust measure. For 36 bust it requires 1 yard, 36 inches wide. Price 10 cents.

5068—Ladies' Dressing Sack.—Cut in 7 sizes, 32 to 44 bust measure. Size 36 requires 2½ yards of 36-inch material; 4½ yards of edging. Price 15 cents.

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MARKETS

DETROIT WHOLESALE MARKETS.

February 22, 1911.
Grains and Seeds.

Wheat.—The wheat market continues to be bearish, and prices rule below those of a week ago. The market here is changing independently of those abroad, the influence of the trade agreement with Canada being a factor working to the detriment of the bulls in this country. Liverpool has recently been slighted by shipments abroad, an unusually large portion of wheat going to the continent instead of the English port. Russian exports are smaller, and India's crop is not encouraging to buyers. Besides this the situation in South America is strictly bullish. But in spite of these conditions the American market continues on the decline. Farmers fearing worse conditions ahead, are ready sellers, thereby making it easier to depress prices to satisfy those who want wheat and allow those who carry it to stock up with the grain. One year ago the price paid here for No. 2 red wheat was \$1.25 per bu. Quotations for the past week are:

	No. 2	No. 1	Red.	White.	May.	July.
Thursday	91.	90.	95 3/4	94 3/4	92 3/4	92 3/4
Friday	90 1/2	89 1/2	94 3/4	93 3/4	92	92
Saturday	90 1/2	89 1/2	94 3/4	93 3/4	92	92
Monday	90	89	94	93	91	91
Tuesday	90	89	94	93	91 1/4	91 1/4
Wednesday	90	89	94	93	91 1/4	91 1/4

Corn.—The corn deal has recovered the loss of a week ago. While the change in weather conditions has made it possible to increase deliveries at primary points, it also has given the trade general support by its indirect influence. Feeders are using a large per cent of the crop in finishing their flocks and herds. The visible supply increased nearly a half million bushels. Shipments abroad were large. One year ago the price for No. 3 corn was 65c per bu. Quotations for the past week are:

	No. 3	No. 3	Yellow.
Thursday	46 1/4	47 1/4	47 1/4
Friday	46 1/4	47 1/4	47 1/4
Saturday	46 1/4	47 1/4	47 1/4
Monday	46 1/4	47 1/4	47 1/4
Tuesday	46 1/4	47 1/4	47 1/4
Wednesday	46 1/4	47 1/4	47 1/4

Oats.—A portion of the previous week's loss was recovered. The crop is steady at the higher figures. The advance is largely influenced by the higher prices for corn. The local market is quiet, transactions being few in number. The visible supply is very little altered from a week ago. At this date in 1909 Standard oats were quoted at 49 1/4c per bu. Quotations for the past week are:

	Standard	No. 3	White.
Thursday	32 1/4	32	32
Friday	32 1/4	32	32
Saturday	32 1/4	32	32
Monday	32 1/4	32	32
Tuesday	32 1/4	32	32 1/4
Wednesday	32 1/4	32	32 1/4

Beans.—The nominal quotations for cash beans remains at \$2, while the May option is 5c higher. The market is dead so far as transactions are concerned. The figures as given out by the Board of Trade are as follows:

	Cash.	May.
Thursday	\$2.00	\$2.05
Friday	2.00	2.05
Saturday	2.00	2.05
Monday	2.00	2.05
Tuesday	2.00	2.05
Wednesday	2.00	2.05

Clover Seed.—While the quotations for alfalfa are advanced 5c, those for other grades and kinds of clover are steady with last week. The market is dull, with evidence of an approaching demand from farmers for spring seeding. It is anticipated that within a few weeks large shipments will be made countryward. Quotations for the past week are:

	Prime Spot.	Mar.	Alsike.
Thursday	\$8.80	\$8.80	\$9.20
Friday	8.80	8.80	9.25
Saturday	8.80	8.80	9.25
Monday	8.80	8.80	9.25
Tuesday	8.80	8.80	9.25
Wednesday	8.80	8.80	9.25

Barley.—Barley advanced 20c per cwt. the past week, it now being quoted at \$1.80.

Rye.—There is no change in the price for rye, and the market is firm and dull. The quotation is 84 1/2c per bu. for Cash No. 1.

Visible Supply of Grains.

	This week.	Last week.
Wheat	42,478,000	43,133,000
Corn	11,383,000	10,965,000
Oats	16,299,000	16,298,000
Rye	310,000	361,000
Barley	1,333,000	1,424,000

Flour, Feed, Provisions, Etc.

Flour.—Flour is moving very slow and prices have declined since last week. Quotations are:

Clear	\$4.25
Straight	4.65
Patent Michigan	5.40
Ordinary Patent	4.90

Hay and Straw.—Hay values are steady except a reduction in mixed hay prices. Quotations on baled hay in car lots f. o. b. Detroit are: No. 1 timothy, \$16.50@17; No. 2 timothy, \$15.50@16; clover, mixed, \$15; rye straw, \$7@7.50; wheat and oat straw, \$6@6.50 per ton.

Feed.—All grades steady except coarse corn feeds which advanced a dollar. Carlot prices on track are: Bran, \$25 per ton; coarse middlings, \$26; fine middlings, \$23; cracked corn, \$23; coarse corn meal, \$23; corn and oat chop, \$20 per ton.

Potatoes.—No relief is offered sellers of tubers as conditions and prices here remain at the old figures. In car lots Mich-

igan potatoes are selling at 37@40c per bushel.

Provisions.—Family pork, \$20@21; mess pork, \$19; medium clear, \$18@20; smoked hams, 13c; briskets, 11 1/2c; shoulders, 10 1/2c; picnic hams, 10 1/2c; bacon, 15@16c; pure lard in tierces, 10c; kettle rendered lard, 11c.

Dairy and Poultry Products.

Butter.—A steady market ruled the past week. There is a good demand for both creamery and dairy goods and the trade is fairly active. Extra creameries are now quoted at 26 1/2c; firsts, 23 1/2c; dairy, 17c; packing stock at 14 1/2c per lb.

Eggs.—The knowledge that eggs are cheap and plentiful has turned the attention of the consuming public to them and now the market is of large dimensions with the demand so completely taking care of the supply that values advanced 2 1/2c since a week ago. Fresh receipts, case count, cases included, are now quoted at 18c per dozen.

Poultry.—The incidents of this deal are too small to cause any change in values. Quotations are: Dressed—Turkeys, 20@23c; chickens, 15@15 1/2c; fowls, 15@15 1/2c; ducks, 18@19c; geese, 14@15c per lb. Live—Spring chickens, 14@14 1/2c; fowls, 13 1/2@14c; old roosters, 9c; turkeys, 18@19c; geese, 12@13c; ducks 15@16c per lb.

Cheese.—Michigan, 17c; Michigan late, 15@16c. York state, September, 17@18c; do. late made, 15@16c; Limburger, old, 16@17c; Swiss domestic block, 18@22c; cream brick, 16@18c.

Dressed Pork.—Price is lower at 9c per lb; for heavy, 8@8 1/2c.

Veal.—Market lower. Choice, 11@11 1/2c; ordinary, 9c per lb.

Rabbits.—Steady. Per dozen, \$1.25@1.40.

Fruits and Vegetables.

Cranberries.—Steady. Quoted at \$3.25 per bu.

Cabbage.—Steady. Selling at \$1.75 per bbl. for new.

Onions.—Steady at 55c per bu.

Honey.—Choice to fancy comb, 15@17c per lb.

Apples.—A healthy demand is influencing dealers to advance prices. The trade is active. Fancy greenings are quoted at \$5.50@6; Baldwins, \$4.50@5.50; Steel reds, \$6; ordinary grades, \$3@3.50 per bbl. Western apples, \$2.25@2.50 per box.

OTHER MARKETS.

Grand Rapids.

The egg market fluctuates from day to day, according to the weather. On Tuesday of this week local dealers were paying the trade 16c but warmer weather will send the market off again. Dairy butter is bringing 20c, creamery 26c. Dressed hogs are worth around 9c; veal, 6@10c. Poultry is unchanged. The bean market is very flat, white beans being quoted on \$1.65 basis to farmers and red kidneys at \$2.75. Potatoes continue to move out of the state as fast as dealers can find markets that want them, which seems to be a difficult matter these days. The price paid for tubers is around 30c, with more stock sold below that figure than above it. Wheat is off 3c, the mills quoting 85c for No. 2 red.

New York.

Butter.—Market steady at slightly reduced values. Creamery specials are quoted at 28c; extras, 25 1/2@26c; seconds 17@18c; refrigerators, firsts, 16c; do. seconds, 15@15 1/2c.

Eggs.—The big break of a week ago was partially mended by advances since. Offerings are large. Fresh gathered extras, 21c; do. firsts, 19@19 1/2c; do. seconds 17@18c; refrigerators, firsts, 16c; do. seconds, 15@15 1/2c.

Poultry.—Market firm with last week. Western chickens, 14c; fowls, 13 1/2@16 1/2c; turkeys, 15@23c per lb.

Chicago.

Wheat.—No. 2 red, 89 1/2@91c; May, 91 3/4c; July, 88 3/4c per bu.

Corn.—No. 2, 47 1/4@47 3/4c; May, 49 1/4c; July, 50 3/4c per bu.

Oats.—No. 2 white, 31 1/4@32c; May, 31 3/4c; July, 31 3/4c.

Barley.—Malting grades, 80@94c per bu; feeding, 60@75c.

Butter.—The only change in butter quotations is a little wider compass to dairy prices. Receipts Monday were slightly below those of the previous Monday, nearly double what they were for the same period in 1910 and more than three times the receipts for the corresponding day of 1909. Quotations now are: Creameries, 17@26 1/2c; dairies, 16@22c.

Eggs.—Prices are higher and firm. Receipts were about one-half what they were the previous week. Quotations are: Prime firsts, 19c; firsts, 18c; at mark, cases included, 12@14c per dozen.

Potatoes.—The anticipated lower values came in spite of a reduction in receipts. Market is steady at the new figures and choice to fancy are quoted at 46@48c per bu; fair to good, 42@45c.

Beans.—Market holding steady under light offerings. Demand quiet. Choice, hand-picked pea beans quoted at \$2.05@2.10 per bu; prime, \$1.95@2; red kidneys, \$3.35@3.45.

Hay and Straw.—Prices ruling steady. Quotations now are: Choice timothy, \$18@19; No. 1 timothy, \$16.50@17.50; No. 2 do. and No. 1 mixed, \$15@16; No. 3 do. and No. 2 mixed, \$11@14.50; rye straw, \$8@8.50; oat straw, \$7@7.50; wheat straw, \$6@6.50 per ton.

Boston.

Wool.—This market is unsteady. There is evidence of improvement in some directions, but the line of inquiry is narrow, and while there is less inclination on the part of holders to sell at sacrifice prices, the condition of the goods market is discouraging to holders. The dealers are also doing what they can to clean up the 1910 market to prepare for the care of the new clip. Following are the leading domestic quotations for the week: Ohio and Pennsylvania fleeces—Delaine, wash-

ed, 34c; XX, 31 1/2@32c; 1/2-blood combing, 29@30c; 3/4-blood combing, 29c; 1/4-blood combing, 27@27 1/2c; delaine unwashed, 26 1/4@27c; fine unwashed, 22c. Michigan, Wisconsin and New York fleeces—Fine unwashed, 20@21c; delaine unwashed, 26@27c; 1/2-blood unwashed, 28@29c; 3/4-blood unwashed, 27@28c. Kentucky, Indiana and Missouri—3/8-blood, 27 1/2@28c; 1/4-blood, 26c.

Elgin.

Butter.—Market firm at 26 1/2c per lb., which is the quotation of last week. Output for the week, 453,600 lbs., as compared with 468,300 lbs. for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

February 20, 1911.

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

Receipts of stock here today as follows: Cattle, 156 cars; hogs, 14,400; sheep and lambs, 20,000; calves, 1,200.

With 156 cars of cattle on sale here today and 30,000 reported in Chicago, our market is slow and barely steady, and in some instances, especially on the in-between grades, cattle that lack fat and the common cows are 10@15c lower than last week.

We quote: Best 1,300 to 1,400-lb. steers \$6.40@6.65; good prime 1,200 to 1,300-lb. steers, \$5.75@6.35; best 1,100 to 1,200-lb. shipping steers, \$5.50@6.25; medium butcher steers, 1,000 to 1,100 lbs., \$5.35@5.75; light butcher steers, \$4.65@5.25; best fat cows, \$4.75@5.25; fair to good do. \$3.75@4.35; common to medium do., \$3.25@3.75; trimmers, \$2.75@3.25; best fat heifers, \$5.50@6; good fat heifers, \$5@5.50; fair to good do., \$4.25@4.65; stock heifers, \$3.10@3.35; best feeding steers, dehorned, \$4.60@4.85; medium to good feeding steers \$4.25@4.45; stockers, all grades, \$3.85@4.15; best bulls, \$5@5.35; bologna bulls, \$4.25@4.75; stock bulls, fair to good, \$3.75@4.25; best milkers and springers, \$5@6.5; good to best do., \$4@5; common to good do., \$2.50@3.5.

Common milkers and springers hard to dispose of at satisfactory prices. Hard to sell late springers for satisfactory prices; in most cases have to be sold by weight.

Hog market opened about steady on medium and yorkers today; heavies and pigs being a shade stronger than Saturday, and closing steady at the opening.

We quote: Mixed and heavies, \$7.50@7.60; mixed, \$7.75@7.80; yorkers, \$7.90@8; pigs, \$8.25@8.30; roughs, \$6.60@6.80; stags, \$5.25@5.50. All selling that got yarded in time for the market.

Lamb market opened active today; most of the choice handy lambs selling at \$6.35@6.40. Heavy lambs, that is, weighing 100 lbs. and over, selling mostly at \$5.40@5.50. Look for steady to strong prices the balance of the week. Sheep market was active today; most of the choice ewes selling at \$4.25@4.50; others, \$4.50@4.75; few choice handy weights at \$4.90. Look for about steady prices on sheep the balance of the week.

We quote: Best handy lambs, \$6.35@6.40; heavy lambs, \$5.40@5.50; bucks, \$3.25@3.75; heavy ewes, \$4@4.75; yearlings, \$5@5.50; wethers, \$4.50@4.75; cull sheep, \$3.25@3.75; handy ewes, \$4.25@4.50; veals, choice to extra, \$10.25@10.50; fair to good do., \$7.50@10; heavy calves, \$5@6.50.

Chicago.

February 20, 1911.

Cattle. Hogs. Sheep.
Receipts today 30,000 36,000 22,000
Same day last week.....22,008 37,136 13,249
Received last week.....56,118 156,598 89,134
Same week last year.....60,217 153,690 56,054

Trade in cattle starts off this week with not much animation except in butcher stock and the more attractive lots of steers, these classes going at steady prices, while others are inclined to be rather slow, prices averaging fully a dime lower, following last week's late break of 10@15c in steers and 15@25c in butcher stock. Feeders are unchanged. Hogs are in smaller supply than was expected, but bad country roads are supposed to have cut down the "run." However, the freeze-up will enable owners to move their swine if they wish to. Early this morning hogs were active and 5@10c higher, with sales at \$6.85@7.65 and pigs going at \$7.35@7.75, but by the middle of the morning the demand fell off, and the advance disappeared. A week ago was the day of the enormous receipts, and hogs sold at \$6.70@7.45, while the following day sales were at \$6.55@7.35. The hogs received last week averaged in weight 232 lbs., compared with 212 lbs. a year ago and 205 lbs. two years ago, and heavy lots predominate today. Sheep and yearlings are steady today and lambs are a little lower, lambs going at \$5@6.25, wethers at \$4@4.65, bucks at \$3@3.50 and yearlings at \$4.50@5.75. Lambs went at one time last week as high as \$6.50, being as high at the close as a week earlier and sheep and yearlings generally 15c higher than a week earlier. About 5,000 sheep and lambs were carried over unsold from last Saturday, thus materially swelling today's supply.

Cattle were not in very large demand last week, and only by keeping down supplies to moderate proportions was a bad break in prices averted. The best support was furnished by eastern shippers, who bought the better class of steers rather extensively, while local packers were slow buyers, the cheap class of steers frequently selling on a weak basis. The practice of sending in over half of the cattle supply of the whole week on the opening day continues, and on Monday last week 31,369 head showed up, resulting in lower prices before the day was over, although the small supply of the preceding week made a better demand than usual. Moderate receipts on other days brought about a rally in prices, and the week was a very good

one for sellers, on the whole. The better class of both heavy and light steers sold about the same in price, yearlings and weighty steers going at \$6.25@6.85, and a four-load lot of prime 1,500-lb. Hereford Iowa-fed steers sold Monday at \$6.90. The commoner light steers sold at \$4.90@5.65, and the bulk of the steers sold at \$5.50@6.60, with export steers salable at \$5.75@6.30. Butcher stock sold extremely well on the whole, with cows and heifers taken at \$3.50@6.30, while cutters sold at \$3@3.45, canners at \$2.40@2.95 and bulls at \$3.75@5.80. All the common grades of cattle sold much higher than in former years. There was a smaller demand for stockers and feeders than usual, but limited offerings made a high scale of prices, especially for the better class of these cattle. Stockers sold at \$4@5.65 and feeders at \$5.10@5.95, while stock and feeder heifers brought \$3@4.95. Calves were active, but lower, with sales at \$3.50@9.15 per 100 lbs. Milk and springers were in moderate supply and demand at \$30@60 per head.

Hogs dropped 25@30c on the opening day last week on account of the arrival of 68,538 head, the biggest number marketed in nearly a year. This big run was credited in great part to the fact that many farm renters who expect to go to other farms the first of March, known as renting day, wanted to dispose of their holdings. The fall in prices had the usual effect of causing many stockmen to withhold their hogs until a reaction took place, and the greatly decreased receipts on subsequent days brought about some good advances, hogs having sold early in the week at \$6.40@7.35. Buying by local speculators and shippers was mainly responsible for the upturns, and some good buying took place by the middle of the week due to fears that muddy country roads would interfere with the movement of stock from the country in the immediate future. It should be understood that the last spring's pigs are now maturing very fast, and the Chicago receipts of hogs since Jan. 1 have run much ahead of a year ago in numbers, as well as in average weight. Prospects seem to point to lower prices, but much will depend upon how owners market their swine. Light hogs and pigs not quite heavy enough to class as hogs are still market toppers, and extremely heavy hogs sell lowest of all.

Sheep and lambs had some good advances last week after early declines, the receipts starting in on a liberal scale and falling off materially later. Choice, fat, light-weight lambs were most active of all and led the advance, followed by light yearlings on the lamb order. Fat wethers advanced sharply also, however, as did ewes, and it was a good week for owners of fat stock that was not too heavy in weight to suit the popular taste. The sheepmen should bear in mind the important fact that it is only when exporters are buying is there a reliable demand for heavy flocks near top prices, and this outlet is very irregular and not worth taking into consideration much of the time. Michigan is furnishing a big share of the fat lambs, and Colorado is sending in increasing supplies. Shorn consignments are discriminated against by buyers. Feeders are scarce and wanted badly, and the demand for breeding ewes continues strong.

Horses were in much better demand last week, and the marked improvement in the average grading of the receipts was a good feature that was appreciated by buyers. There was a good attendance of out-of-town buyers on several days, and trade was animated, with the decline in prices of the previous week largely recovered the first three days. Small southern chunks were at times sparingly offered and had a fair demand at \$65@125 per head, while there was a marked improvement in the demand for farm mares at \$140@200 and occasionally at a higher figure. Wagon horses sold freely at \$140@180, and drafters sold anywhere from \$185 up to \$325, according to weight and finish. Drivers were salable at \$150@300, with not much doing. F.

LIVE STOCK NOTES.

Silage is entering into cattle feeding to a rapidly increasing extent everywhere in feeding districts, and it is a great economizer. Steers that receive silage rations show more thrift and flesh than those receiving exclusive rations of grain. Experience goes to show that corn silage and cottonseed meal make a lower cost of feeding for cattle than any other combination.

Big shipments of hogs have taken place recently, and it is evident that lots of spring pigs have become well-finished hogs. Still, the country's supply is seriously short, and farmers cannot do better than to get all the good breeding sows possible and start in breeding pigs for the future market.

Better times, for sheepmen next summer are promised, after the flocks now on feed are out of the way. Flocks on western ranges are reported to be wintering in good shape, the season having been unusually mild, but the supplies are far below those of former years.

The cattle markets of the country are not capable of using great numbers of beef cattle at the present time, for the consumption of beef is below an average because of high prices. Stockmen who are in the cattle business should either grow yearlings on their farms or else feed cattle that can be sold when finished at not too high prices. Heifers and cows are especially good sellers.

The big premium paid in western markets for hogs of the lighter weights is resulting in some stockmen shipping more hogs that have not reached the heavier weights. This is likely to become more general so long as light hogs and pigs continue to top the market. Better hogs than are being marketed were never seen. Evidently, they have had lots of care and all they wanted to eat.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
February 23, 1911.

Cattle.

Receipts, 1,189. Common cows and bulls steady; good grades 15¢ to 25¢ lower.

We quote: Best steers and heifers, \$5.75; steers and heifers, 1,000 to 1,200, \$5.25 to \$5.65; steers and heifers, 800 to 1,000, \$5 to \$5.50; steers and heifers that are fat, 500 to 700, \$4.50 to \$5; choice fat cows, \$4.75; good fat cows, \$4 to \$4.50; common cows, \$3.25 to \$3.75; canners, \$2.75 to \$3.35; choice heavy bulls, \$4.75 to \$5; fair to good bolognas, bulls, \$4.50 to \$4.75; stock bulls, \$4 to \$4.50; milkers, large, young, medium age, \$4 to \$5.50; common milkers, \$2.50 to \$3.50.

Bishop, B. & H. sold Sullivan P. Co. 1 bull weighing 1,330 at \$4.75, 7 butchers av 946 at \$3.85; to Parker, W. & Co. 2 bulls av 1,200 at \$4.80, 3 do av 1,043 at \$4.75, 1 do weighing 1,030 at \$4.75, 13 cows av 922 at \$3.45, 2 do av 775 at \$3.40; to Hammond, S. & Co. 14 steers av 763 at \$5.25, 2 cows av 985 at \$4, 6 steers av 1,060 at \$5.55, 3 cows av 933 at \$3.40, 1 do weighing 1,200 at \$4.25, 4 do av 1,095 at \$3.50; to Kamman B. Co. 6 steers av 795 at \$5.20, 21 do av 804 at \$5.25; to Rattkowsky 2 cows av 920 at \$3.75, 5 do av 920 at \$4; to Goose 9 do av 1,052 at \$4.15; to Regan 8 butchers av 762 at \$4.90; to Newton B. Co. 25 steers av 1,168 at \$5.90, 22 butchers av 763 at \$5, 3 cows av 1,107 at \$3.75; to Sullivan P. Co. 2 cows av 940 at \$3.50, 1 bull weighing 1,180 at \$4.75, 2 cows av 985 at \$3.50, 1 steer weighing 1,020 at \$5.25, 3 heifers av 723 at \$4.50, 6 cows av 1,105 at \$4.25; to Mason 2 cows av 935 at \$4.25, 2 steers av 965 at \$5.25, 2 cows av 925 at \$3.25, 2 heifers av 720 at \$5; to Thompson Bros. 7 cows av 1,126 at \$4.25; to Lingeman 7 steers av 700 at \$4.75; to Mich. B. Co. 7 steers av 808 at \$5, 10 do av 877 at \$5.25; to Breitenbeck 8 do av 987 at \$5.45, 3 do av 693 at \$4.75; to Mich. B. Co. 6 cows av 1,166 at \$4.50; to Schuman 5 butchers av 716 at \$5.

Roe Com. Co. sold Goose 9 cows av 1,052 at \$4.15; to Newton B. Co. 14 steers av 941 at \$5.25; to Thompson Bros. 1 cow weighing 1,270 at \$4, 9 do av 1,050 at \$4.50, 1 bull weighing 1,350 at \$5; to Newton B. Co. 12 steers av 840 at \$5.25; to Mich. B. Co. 33 steers av 931 at \$5.35; to Sullivan P. Co. 4 cows av 1,100 at \$4; to Hammond, S. & Co. 3 bulls av 1,070 at \$4.60, 7 cows av 814 at \$3.10; to Mich. B. Co. 3 steers and heifers av 613 at \$5, 8 do av 880 at \$5.25; to Goose 3 cows av 1,020 at \$4; to Newton B. Co. 25 steers av 1,038 at \$5.55, 5 butchers av 580 at \$4.40; to Kamman B. Co. 5 do av 744 at \$5.25; to Rattkowsky 1 cow weighing 930 at \$4, 1 bull weighing 980 at \$4.75, 1 steer weighing 400 at \$5; to Thompson Bros. 1 cow weighing 760 at \$3.25, 10 do av 941 at \$3.75; to Sullivan P. Co. 1 bull weighing 1,950 at \$5.25.

Haley & M. sold Newton B. Co. 4 butchers av 847 at \$5; to Rattkowsky 3 bulls av 973 at \$4.80; to Applebaum 4 cows av 970 at \$4.40; to Mich. B. Co. 14 steers av 882 at \$5.10.

Merritt sold Parker, W. & Co. 4 bulls av 1,507 at \$5, 2 cows av 1,080 at \$4.50, 2 do av 960 at \$3.75, 2 steers av 1,175 at \$5.75.

Spicer & R. sold Bresnahan 4 heifers av 610 at \$4.25; to Hammond, S. & Co. 1,200 at \$5, 1 steer weighing 1,080 at \$6, 12 steers av 842 at \$5.25, 1 bull weighing 1,270 at \$4.25, 6 cows av 900 at \$3.65; to Rattkowsky 1 steer weighing 870 at \$4.75, 5 cows av 1,022 at \$3.85; to Fry 15 butchers av 763 at \$4.50; to Goodwin 4 cows av 1,090 at \$4.

Veal Calves.

Receipts, 677. Market strong at last week's prices. Best, \$9 to \$9.50; others, \$4 to \$8.75; milch cows and springers steady.

Bishop, B. & H. sold Parker, W. & Co. 20 av 150 at \$9.50, 3 av 155 at \$9.50; to Goose 7 av 125 at \$8; to Newton B. Co. 4 av 128 at \$9, 8 av 145 at \$9.50, 4 av 140 at \$7; to Sullivan P. Co. 1 weighing 160 at \$9.50, 1 weighing 120 at \$7, 2 av 135 at \$9.50, 4 av 120 at \$7, 16 av 140 at \$9.50; to Goose 3 av 115 at \$8.60; to Parker, W. & Co. 1 weighing 130 at \$9.50, 3 av 150 at \$9.50, 7 av 155 at \$9.50; to Nagle P. Co. 7 av 135 at \$8.50, 8 av 125 at \$9, 8 av 130 at \$9; to Swift & Co. 1 weighing 130 at \$9.50, 10 av 120 at \$9, 12 av 150 at \$9.50; to Parker, W. & Co. 3 av 160 at \$9, 2 av 135 at \$8.50, 2 av 150 at \$9.50.

Spicer & R. sold Newton B. Co. 5 av 150 at \$9.60; to Mich. B. Co. 13 av 130 at \$9; to Sullivan P. Co. 8 av 100 at \$5.75; to Goose 4 av 250 at \$4.50, 7 av 135 at \$9, 1 weighing 320 at \$4.50, 1 weighing 380 at \$4.50; to Parker, W. & Co. 22 av 180 at \$8, 11 av 130 at \$7.50.

Haley & M. sold Goose 4 av 155 at \$7.75; to Breitenbeck 10 av 127 at \$8, 7 av 150 at \$8; to Goose 1 weighing 340 at \$4.50, 9 av 140 at \$7.50, 1 weighing 340 at \$4.50.

Sheep and Lambs. Receipts, 638. Market 10 to 15¢ higher than last week. Best lambs, \$5.70 to \$5.80; fair to good lambs, \$5.25 to \$5.50; light to common lambs, \$4.50 to \$5.25; fair to good sheep, \$3.50 to \$4; culls and common, \$2.50 to \$3; heavy lambs, 90 lbs. up, \$5 to \$5.25.

Bishop, B. & H. sold Nagle P. Co. 233 lambs av 75 at \$5.90, 190 do av 85 at \$5.80, 347 do av 83 at \$5.80, 50 sheep av 120 at \$4, 14 do av 118 at \$4, 8 do av 155 at \$3.75, 106 lambs av 86 at \$5.65; to Sullivan P. Co. 17 sheep av 90 at \$3.25, 9 do av 62 at \$3.40, 53 lambs av 56 at \$4.75, 27 do av

125 at \$5.10, 24 do av 105 at \$5.25; to Mich. B. Co. 13 sheep av 95 at \$3.25, 7 do av 145 at \$4, 35 lambs av 58 at \$5.50, 27 do av 60 at \$5.35; to Hammond, S. & Co. 37 do av 65 at \$5.40; to Breitenbeck 21 do av 70 at \$5.50; to Swift & Co. 106 do av 78 at \$5.80; to Sullivan P. Co. 16 do av 58 at \$5.25; to Swift & Co. 26 sheep av 90 at \$3.75, 45 lambs av 78 at \$5.70, 53 do av 80 at \$5.80, 20 do av 70 at \$5.50, 32 do av 83 at \$5.35; to Breitenbeck 24 do av 65 at \$5.10; to Hammond, S. & Co. 63 do av 67 at \$5.65.

Spicer & R. sold Sullivan P. Co. 74 lambs av 80 at \$5.65; to Nagle P. Co. 102 do av 70 at \$5.75, 168 sheep av 118 at \$4.25; to Breitenbeck 3 do av 110 at \$3.50, 12 lambs av 65 at \$5; to Nagle P. Co. 145 do av 80 at \$5.75; to Mich. B. Co. 107 do av 70 at \$5.45.

Haley & M. sold Hammond, S. & Co. 4 sheep av 125 at \$3.25, 29 lambs av 75 at \$5.60, 13 do av 80 at \$5.50.

McMillan sold Sullivan P. Co. 8 sheep av 100 at \$3.65, 13 lambs av 58 at \$5.25. Merritt sold same 59 lambs av 80 at \$5.60.

Sandell & T. sold Hammond, S. & Co. 30 lambs av 70 at \$5.50.

Bennett & S. sold Nagle P. Co. 94 lambs av 83 at \$5.75.

McMillan sold same 98 do av 75 at \$5.60. Downing sold Mich. B. Co. 86 lambs av 70 at \$5.75.

Hogs.

Receipts, 4,351. Market 10¢ below last Thursday's prices.

Range of prices: Light to good butchers, \$1.50; pigs, \$1.60 to \$1.75; light yorkers, \$1.50; heavy, \$1.35 to \$1.50.

Bishop, B. & H. sold Parker, W. & Co. 2,550 av 180 at \$7.50.

Sundry shippers sold same 310 av 190 at \$7.50.

Haley & M. sold Hammond, S. & Co. 450 av 195 at \$7.50.

Spicer & R. sold same 1,525 av 180 at \$7.50.

Sundry shippers sold same 810 av 200 at \$7.50.

Roe Com. Co. sold Sullivan P. Co. 420 av 200 at \$7.50, 140 pigs av 130 at \$7.60.

Friday's Market.

February 17, 1911.

Cattle.

Receipts this week, 1,627; last week, 1,059. Market steady at Thursday's prices.

We quote: Best steers and heifers, \$5.75 to \$6; steers and heifers, 1,000 to 1,200 lbs., \$5.25 to \$5.75; steers and heifers, 800 to 1,000 lbs., \$5 to \$5.50; steers and heifers that are fat, 500 to 700 lbs., \$4.50 to \$5; choice fat cows, \$4.75; good fat cows, \$4 to \$4.50; common cows, \$3.25 to \$3.75; canners, \$2.75 to \$3.35; choice heavy bulls, \$5; fair to good bolognas, \$4.50 to \$4.75; stock bulls, \$4 to \$4.50; milkers, large, young, medium age, \$4 to \$5.50; common milkers, \$2.50 to \$3.50.

Veal Calves.

Receipts this week, 719; last week, 634. Market steady at Thursday's prices. Best \$9 to \$9.50; others, \$4 to \$8.75. Milch cows and springers steady.

Sheep and Lambs.

Receipts this week, 9,084; last week, 8,870. Market 10¢ higher than on Thursday. Best lambs, \$5.75 to \$5.85; fair to good lambs, \$5.25 to \$5.50; light to common lambs, \$4.50 to \$5; fair to good sheep, \$3.50 to \$3.75; culls and common, \$2.50 to \$3; heavy lambs, 90 lbs. and up, \$5 to \$5.10.

Hogs.

Receipts this week, 3,659; last week, 3,598. Market steady at Thursday's prices. Range of prices: Light to good butchers, \$7.60; pigs, \$7.70 to \$7.80; light yorkers, \$7.50 to \$7.60; heavy, \$7.35 to \$7.50.

Seventy-seven per cent more feeding cattle were shipped from western markets to feeding districts in January than in the same month last year, the total number being about 149,000 head. Buyers seemed to be so determined to refill their feed lots in order to use up their feed that prices for the cattle were a secondary matter, and as high as \$6 per 100 lbs. was paid in the Chicago market for well-bred weighty feeders. The call was and still is for choice feeders that carry considerable flesh already, although there has also been all the year a steady demand for choice stockers for roughing through the winter and grazing next summer. However, there are numerous farmers who have not bought any cattle, and those who have no hogs to follow cattle show a disposition to hold back.

Farmers are taking a renewed interest in breeding hogs, realizing the great shortage in the country's supply, and young sows are being held back for breeding to a much greater extent than in most former years. Few sows are showing up in the markets of the country, and the greater part of the 1910 farrowed sows have been held over to breed.

Charles Shurtle, the veteran sheep seller at the Chicago stock yards says: "As exporters buy only a few heavy sheep and lambs each week, they do not have to do much hustling to get what they want at about their own prices. The export trade would be better were it not for the fact that so few sheep have been exported during the past three years, owners of steamers have taken out the live stock apartments on steamers, and this space is hard to get."

M. W. Rees, of Iowa, marketed on Monday, Jan. 30, at Chicago, 16 grade Aberdeen-Angus beef steers at \$7 per 100 lbs., their average weight being 1,293 lbs. This was his first experience in feeding cattle, and naturally, he was greatly pleased with the result of his efforts, the steers topping the market on a day when 26,000 cattle were on sale. The cattle were purchased by Mr. Rees in December, 1909, and the next summer they had the run of a pasture, while the following winter a cornstalk field, with clover hay, were added. When put on feed on the tenth day of August the cattle averaged around 900 lbs. in weight, their feed consisting of green corn. Sixty days later a full feed

of ear corn, oats and clover hay were furnished, and during the last 40 days oil meal was added. The owner declared he got a fine price for his corn, which he raised, as well as for the other feeds given to the cattle, and he thinks he was well remunerated for his time and work.

Reeding ewes are still in good demand throughout the country, with recent offers of \$5 per head for spring delivery, while most owners are holding on for \$6.

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230-ACRE FARM, 12-room house, good cellar, eastern, well and windmill. Wood and ice house. Good basement barn, granary, hog house, double corn crib, stock scales. Buildings all in good repair. Fair orchard. Soil clay loam, gently rolling, well drained, very productive, 80 acres wheat on ground, 20 acres peach and maple timber. Fenced with wire and rails. 1/4 mile to R. R. Station, school and church. On R. F. D. and creamery routes. One of best farms in Barry Co. Reasons for sale—heirship property. Address: G. E. COATS, Administrator, Coate Grove, Barry County, Michigan.

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HOME AND YOUTH

MY ALBUM.

BY FLOY SCHOONMAKER ARMSTRONG.

The book is large and clumsy,
Its lids are thick and strong,
Its carved clasp is stout and bright,
Its leaves are broad and long,
Each page contains the romance
Of a life, as you will see,
And although you cannot read them,
They are very plain to me.

A wealth of joy and comfort,
Do I in this volume find,
For the friends it holds are loyal
Tho' all others are unkind.
How they cheer me when I sorrow!
How they smile when I am glad!
For their shadowy forms seem real,
As if they in life were clad.

Silent friends! O absent dear ones!
You have stood the test of years,
And tonight your pictured faces
Gaze I on through blinding tears.
Memory wafts your loving voices
To my lonely, homesick heart;
Distance fades—you all are with me,
Naught can keep true friends apart.

SOLVING THE PROBLEM.

BY LALIA MITCHELL.

"It should not be called The Servant Girl Problem," said Judge Gayland, leaning back on the rustic seat under the silver maple, and in his voice I recognized the tone that is said to awe legal offenders but serves only to arouse a little demon of antagonism in my heart. "If you could hear some of the pitiful stories that I do you would not wonder that girls sell their bodies rather than subject their souls to the tyranny of a nagging woman, who evidently hires help for the sole purpose of having a slave to tyrannize over."

The Judge's brief on the hired girl subject was too long and a little tiresome, but the conversation soon drifted to the pleasanter topic of our approaching wedding, then less than a month away, and as a lover I found him so altogether adorable that I quite forgot my absolute disapproval of his judicial statements.

When alone in my room I remembered them, however, and trembled with a premonition. Mrs. Gayland would, of necessity, hire one or more servants, and Mrs. Gayland would be sadly inexperienced. Then, in case of a misunderstanding (that was the term I should have used but I didn't) the fact that my husband was likely to be in sympathy with the cook did not seem reassuring.

I suppose I was nervous that week—a little unbalanced, as brides-to-be sometimes are—and from a mere subject of conversation the matter of whether servant girl or mistress deserves the greater amount of pity became a vital problem of my life. Of course, when the Judge came to see me I forgot about Bridget, or Mary, or Ann, whatever I happened to be calling her that day, but when my lover was gone I stood once more face to face with the problem that some inner subconscious self seemed urging upon me.

Then an inspiration came, and I resolved to carry it out. Early in the days of our betrothal I had announced that up to three weeks before my wedding day I would give not one thought to the selecting of a trousseau. Then, with my sister, Mary, I would go to Trenton, where lived Madam English, designer and maker of my none-too-many best gowns. We three would give two entire weeks to the trousseau question, and then Solomon in all his glory—

This left two weeks absolutely my own before the important day when the Judge's wedding ring should glisten on my finger, and how better could I use them than by solving "the Problem" which had suddenly loomed so big and black before me? Mary was of exactly my height and size, and she and Madam English would enjoy the task which had suddenly grown doubly tiresome to me.

A week before I was to leave for Trenton I answered an advertisement in a city paper and on the important day when Madam English was supposed to be taking my measurements I was alighting from a trolley car in a smoky suburb of her city, with a vague feeling of loneliness and an opinion that someone should have met me at the trolley station, although I knew very well that it had never been the custom in my own home to send someone to meet the "help" that came and went, with what I had come to see was deplorable frequency.

The first item in my note book was on the Judge's side and read: 1. Meet girl at station and see that she has someone to carry her satchel if it be a heavy one.

At the front door of 207 Glenwood ave., home of Frederick B. Potter, I rang the bell with a clang that set my nerves tingling. At the same instant I realized that I should have gone around to the kitchen door, and that my future mistress was evidently bound to consider me both impudent and presuming.

A moment later a pretty woman, in whose eyes gleamed a child-like expectancy that won my heart, opened the door. For a moment we stood facing each other in silence, and then I blurted out the very words that I had never dreamed of speaking. I said, "I'm the new girl."

She did not smile, but I did, and I think perhaps I smiled better than I spoke, for she opened the door to admit me and a charming look of confidence beamed in her eyes. Then she piloted me first to my room, which I found pleasant but sadly in need of cleaning, and then to the kitchen, where dinner was already cooking on a gas stove. Such a pitiful little dinner, and yet somehow it seemed to say, "She did the very best she could for me, and this is the result."

With a charming gesture of relief the little woman took off her floury apron and hung it on a hook. Then she exclaimed impetuously, "Oh, I'm so glad you came. I've been in here days and days and days. I've had to neglect the baby, and Fred, and myself, and everything, just because the frying pans had to be washed and the potatoes would not pare themselves." At the door she turned back again to ask "about the table, you know, we need someone to wait upon us, and, too, you see Fred objects to having our little tete-a-tete meals interrupted by the presence of a third party. We have so little time together, but I do want to keep my girls and not be always changing. Fred says there's something wrong with the mistress or girls would stay year after year, unless they died or got married, and yet the last three I've had left because they said I thought I was made of better clay than they were and they weren't good enough to eat with me. The one before came home from her afternoons off in a drunken condition, and the one before that supported her mother and two sisters from my pantry."

I laughed, I couldn't help it, over the tragic tale, and when she had gone I wrote on my side of the note book.

I. Girls should not expect to eat at family table.

II. Girls should not get drunk.

III. Girls should not steal.

The work of preparing meals and keeping the house was not difficult, thanks to years of training when I had not expected to be the wife of one of the richest men in the state, but there were other things to interest me. I am going to let my note book tell the story of the two weeks, and in order to be perfectly fair I shall read the Judge's side first. Item number one has been already recorded.

II. Don't think because you have a girl you can invite six extra people to dinner without telling her.

III. Don't go down to meet a friend and then take dinner, remaining away all the afternoon without telephoning her.

IV. Don't frown if a girl happens to wear a gown prettier than your own. She may have come honestly by it.

V. Don't jump at conclusions because a book agent stays for an hour in your kitchen; you can't be sure he is flirting with the cook. He may be a college student and she may enjoy conversing with him upon subjects you could not understand.

VI. Don't think that because the baby is a darling the girl is bound to want him in the kitchen during her busy hour. She didn't hire out to be nurse girl.

Now that's every solitary item I had on the Judge's side at the end of two weeks, and my own fared no better. These are the ones added after the first day.

IV. Don't get cross in the morning and blame the mistress because you left the supper dishes unwashed.

V. Don't be looking for slights. She did not hire you to have someone to flatter.

VI. Don't get grouchy because she reminds you in the afternoon that the porch needs cleaning. You're paid to keep it clean.

VII. Don't expect too much consideration. You are neither favored company nor a "star boarder."

At the end of the first week I intended to give notice, but my courage failed me, and on the morning of my last day in Trenton I realized that the time had come when something must be done.

What to tell Mrs. Fred Potter I did not know. I could not complain of the work,

of the food or of her treatment. Yet I must find some reasonable excuse. To add to my troubles I spilled a stream of hot coffee over my wrist that very morning, and as she bound it up in soft linen I felt a very Benedict Arnold.

At ten o'clock I found her sitting on the stairs with Frederick, Jr., in her arms and, the stairs being common ground between kitchen and parlor, I gathered up my courage and sank down on the step below her. I intended to tell her I had a letter calling me home, but I did not. Her eyes were so sympathetic that when she put her white, ringed hand down on my head I blurted out the whole miserable story, dampening her pretty lawn skirt with my tears.

She should have been angry and disgusted, but instead that dear child-woman just kissed me and cuddled me and told me she was glad I was going to be married and happy, although she could not understand why I chose a man of twice my own age. I had not told her his name you see; somehow I couldn't bear to mix him in, even with my confession.

When train time came she went with me to the station, insisted upon giving me a dear little pearl pin as a remembrance, and we parted more like old friends than mistress and servant.

A week later the Judge and I were married and four weeks of a delightful honeymoon were spent in the Adirondacks. After our return we went at once to his palatial home, for he was a widower

and had never dismantled the house during the years when he boarded. Then I knew that I was face to face with "the Problem," which somehow I did not mind as I had expected to.

One night I told him of my experience and he seemed but mildly interested in the story until I mentioned the name of my mistress. Then he grew white and pink, and white again, and I found that he had a story even more interesting than my own. His only son, Frederick Potter Gayland, had disobeyed him the year after his graduation, had insisted upon marrying an actress and had been disowned and hidden never to come to his father's home again. The young man, as proud as his sire, had boasted that he did not need even his father's name as a bolster, but that he would go out and make his way in the world without asking either aid or blessing.

The two had drifted so far apart that, although the father had long since forgiven his son, he knew nothing of his whereabouts or that he had taken a position as a bank clerk at a moderate salary under his mother's, which was one of his given names.

The rest of the story needs no telling. When next I went to Trenton I did not go alone, and now father and son are wholly reconciled, while Frederick, Jr., is almost as much my boy as his mother's. As for the servant girl problem, well, at least one family is glad that I set out to solve it and that a kindly fate sent me to 207 Glenwood avenue.

THE GATES OF BAKAPPLEIN

By ELIZABETH JEWETT BROWN and SUSAN JEWETT HOWE.

Chapter XIII.—In the Light of the Harvest Moon.

The cold rain of the previous day and night had given place to bright sunshine when Ned started out again to find work. The cool air had the tang of fall, for although it was early September, in the northwest the autumn comes early; and nerved by the prospect of cold weather coming soon, he wasted not a moment of the day in searching for something to do.

The town was devoted principally to lumber, so he went from mill to mill, from office to office, seeking work but finding none. They had all the men they needed or were likely to need was the story he heard everywhere; disheartened but not discouraged, he then went among the carpenters, hoping to find a job where he could drive nails if nothing more, but there was no opening for a jack workman. Had he been skilled, in one or two instances he would have found ready employment and good pay, but as it was he found nothing.

He went to a cheaper hotel that night. The elation with which he had set out that morning had diminished considerably, yet he would not give up. He felt that there must be a place for him somewhere and that if he looked long enough and hard enough he would find it; so he next morning he started again, returning to his lodgings at night with nothing but a half promise of perhaps obtaining work as a spare hand at the freight depot. Come again in a day or so and he would know definitely, was but a small crumb of encouragement, yet it was better than nothing and he felt hopeful again.

While waiting he sought, but sought vainly, for a job as teamster; then he tried the livery stable, finally securing a couple of days' work in the place of a man who was sick; then the freight yards furnished him another day's employment with the chance that perhaps a month later he would get more work. The boss told him kindly that if he would hang around there every day for awhile he would probably get regular work; but that Ned could not afford to do, and after waiting a week, having earned barely enough to lodge him, he decided to strike the country. There must be a place on a farm that he could fill, he thought, remembering the farm at home and the scarcity of hired help. But the farming country in that section was as yet undeveloped. The farmers were wrestling with lands recently cleared of timber and they had no money to hire help for the winter. What was to be done they could do until spring, was what he heard everywhere, and the end of the first day of his long, solitary tramping found him so weary and discouraged that he felt as if there was no place for him anywhere in the world.

The keen wants of nature were asserting themselves strongly at dusk. All day a heavy, raw wind had been blowing and

he was chilled through. His breakfast had been meagre, his dinner but a cold lunch of bread and cheese he had brought with him, and the appetizing smell of a hearty supper floating out from the open door of a cheery farm house which he was just passing, made him desperate. Without pausing he walked directly to the door and knocked, and when the surprised woman appeared he asked courteously if he could not have food and a night's lodging, offering to pay in money or doing barn chores. Men who came to the door for food did not look like him, she thought rapidly; instantly divining that he was some slick criminal escaping from justice, she shut the door in his face and bolted it.

Too surprised to move for a second, he stared at the inhospitable barrier; then her reasons flashed across his mind. "Next time," he said to himself, "I will not offer to work; then perhaps they will take me for a gentleman and treat me as one."

He tramped hungrily on for over a mile until he reached a house whose windows radiated light and comfort. He could see a motherly woman laying a supper table, and a man was passing from the barn to the house with a brimming milk pail. Ned went to him directly and asked gentlemanly, while trying to keep the hunger out of his voice, if he could stay all night, adding that he would pay well for his trouble. The man agreed cordially; evidently he was not as suspicious as the woman had been, and from the depths of his heart Ned was grateful to him and the good woman who treated him so kindly. He did not state that he was looking for work, for he felt instinctively that if he did so they would think him a liar, for he wore his heavy overcoat and stylish hat, and the rest of his garments were still good. But he talked with them about work and mentally decided that he would have to go to the lumber woods if he wished to find employment for the winter.

He started that way the next day, and when night came he was in a lonely stretch of country with no signs of houses for miles. He had been following the railroad as the best means of walking, and finally, becoming too weary to continue farther, he stopped at a friendly barn, which at least offered shelter if not food, and as a storm was threatening he did not dare to run the risk of exposure.

The barn was in a lonely field, facing a road a few rods from the railroad track. There were ruins of a burned house near by and he conjectured that the owner of the barn had temporarily abandoned the premises, as the large door was not locked and it opened without much effort. In side he found a mow of hay and a few old tools, evidently stored for next season, but there were no signs of animals having been stabled there for some time. It seemed very lonely and deserted, but as he ate his lunch, which he had bought

from the farmer, he had a curious feeling that he was being watched, though when he rose to make a thorough investigation of the premises the feeling left him. He could find no signs of any person whatever, nor any live creature in the building. Concluding that he was getting an attack of nerves, he prepared himself for the night while yet it was light enough to see.

Climbing up on the mow he found that the hay was old and musty. Once he would have turned from it in disgust, but now he was glad of its comfort. After removing his thick woolen suit, as he did not wish to have the necessity of brushing it, he packed it in his valise and attended himself in the oldest and most worn suit he had left, leaving his other presentable suit undisturbed. Then, burrowing deep into the hay, he pulled his warm overcoat over him for a blanket and, soothed by the warmth and lulled by the pattering of rain drops on the roof, he was soon fast asleep.

Just as daylight was struggling through the crevices of the barn he woke, feeling chilled. He had been dreaming of Grace and in his dream they had been in a very cold country where it was impossible to get warm; and his first waking thought, while still impressed by his dream, was of taking off his overcoat and putting it around her shoulders.

He groped for it in the dusky light but could not find it. Then he wormed himself up out of his burrow and began looking for it with nervous haste while a terrible fear was clutching at his heart. But he could not find it; it was gone, and so was his suitcase. He had been robbed in the night and now he had nothing in the world but just the clothes he had on. In the bitterness of his despair he first cursed and raved, then, broken and crushed by this crowning misfortune, he sobbed like a child, until the reaction came and he could think calmly.

Fortunately he had not removed his shoes, so he was entirely clothed. He wondered why the thief had not killed him as well as robbed him. That would have been a fitting end to all his troubles and no one would have known what had ever become of him. But as he had taken everything but his life he supposed he did not think that worth taking. His money was gone. He had carried it in a little leather wallet thrust into his pants pocket. That had been in the clothes he had removed, and again he cursed himself for his folly in not hiding it before he went to sleep. He could account now for the uneasy feeling he had had of being watched, and he wondered where the man could have been while he was searching for him. Now he had nothing, not even an extra handkerchief; everything in the line of clothing he possessed had vanished in the night. Friendless, homeless and penniless, Ned Jackson was reaping the harvest of his own sowing, and reaping it tremendously hard.

It was still storming, though the wind was shifting to the west. Although very hungry, he did not think best to venture out in the rain. Dressed as he was he would soon be wet through, and as he had not the remotest chance of finding the thief he decided to remain where he was until the weather cleared. He had ample time for reflection as he paced up and down the creaky barn floor—ample time to think of his own folly which had brought him to that state. He was intelligent enough, and honest enough, to place the blame where it belonged, and again he berated his own criminal idleness which had ever led him to think of escaping his just deserts when he stole—he called it stealing now to himself—the potatoes from King. And in his frenzy of self-hatred he felt that he was glad he was "getting all that was coming to him, and getting it good and hard."

He had no watch, hence no means of knowing the time except by the sun, yet when it at last shone out, bringing warmth and cheerfulness which penetrated even into the interior of the dingy old barn, Ned knew that it must be past noon. He was ravenously hungry, and as he picked his way across the sodden field he was startled at the reflection of his face in a little pool where he knelt to drink.

He drew back in amazement, hardly realizing that it was his own reflection; that gaunt, haggard, unwashed face with its starting beard and sombre dark-gray eyes under their heavy brows—was it possible that it was he, the erstwhile Ned Jackson who had been so proud, aye, even vain, over his clean-cut, high-bred face and aristocratic appearance. "I look like a thoroughbred now," he thought, sar-

castically remembering Joe Green's words. Then all thought focused itself into one inordinate longing for food which he felt he must have or die.

He left the railroad and followed the rough country road, keeping towards the north and east in direction of the lumber camps. Feeling that he looked enough like a tramp now to satisfy anyone, he stopped at the first house and asked for food, only to hear the cross words of having nothing for tramps and being told to go to work like an honest man if he wanted food. Then, with the sound of the slammed door vibrating in his ears, he hurried down the road, feeling as guilty as if he had committed a crime.

There were no houses for a considerable stretch as the road led through the woods, but he found several bushes of late blackberries which allayed his hunger a little; then, with dragging limbs, heartsick and homesick, he trudged on till night began to close in and the alternative of either sleeping in the woods or finding some place for shelter forced itself upon him again.

Finally he emerged into an open space and soon came upon a small board house in a clearing near a log barn. A man was driving a few cows to the barn and a woman was singing over her work in the house. The fragrant odor of strong coffee, together with fried ham, floated out on the chill air. Driven to desperation by his hunger and weariness, Ned boldly asked the man for supper, saying that he would milk the cows or do anything for food.

The man eyed him intently for a moment. "You ain't a common tramp," he said kindly, "but even if you was I wouldn't turn you away hungry. My boy is off tonight so you can milk if you want to. You take that one; she's an easy milker, and I'll tell the missus to put on an extra plate."

Ned was so thankful that he sat down by the cow feeling as if the greatest blessing in life had come to him. He forgot that he had always hated milking, that he had been such a poor milker on his cousin's farm that after a few trials Ben had declared that he would ruin the best cow that ever stood on four legs. Now, when he tugged at the milking he wished remorsefully that he had learned to do it well, for food and rest that night depended upon his work; but he made a creditable showing, though he was exhausted from fatigue and lack of food when he followed the man into the house.

The woman treated him with motherly kindness and, rightly surmising that he was half-famished, pressed him to eat constantly while apparently unnoticing how ravenously hungry he was. Then, cheered by their kindness, he talked a little of himself and told of the theft of his clothing and that he was looking for work. It was a comfort to see that they believed his story and were sorry for him. Common, illiterate people they were, of the class he had once despised, yet he found himself envying their lot in life and wishing he was one of them, instead of the homeless, penniless wanderer he seemed doomed to be.

He assisted with the chores in the morning. He did not do them well—he did not know how and he was acutely conscious of the fact that he was making a mess of what he tried to do. He felt as if the man would shout "Do-for-now" at him at every turn, but the only remark he made was that he could see Ned was not used to farm work. He advised him to try for a place as teamster in the woods. He thought he might strike such a job as that and, followed by their kind wishes, Ned started away the next morning with a generous lunch wrapped in a newspaper which the woman had delighted in putting up for him. Their kindness had done him good and he was still hopeful of better days ahead.

The chilling storms of the previous days had given place to almost summer weather, although the woods were tinged with autumnal glories. The kind treatment he had received, and the balmy weather, caused Ned to have a very hopeful look on life as he trudged ahead. At noon he reached another farm house and asked immediately for work, offering to do anything for the sake of some dinner. He was motioned to the woodpile where he industriously went to work, splitting up enough to last for several hours before he was summoned to an indifferent dinner in a very untidy kitchen which buzzed with flies. Once he would have sickened at the sight of the underdone, boiled dinner swimming in grease, with the flies swarming on the bread, drabbling their wings in the soft, smelly butter, hovering



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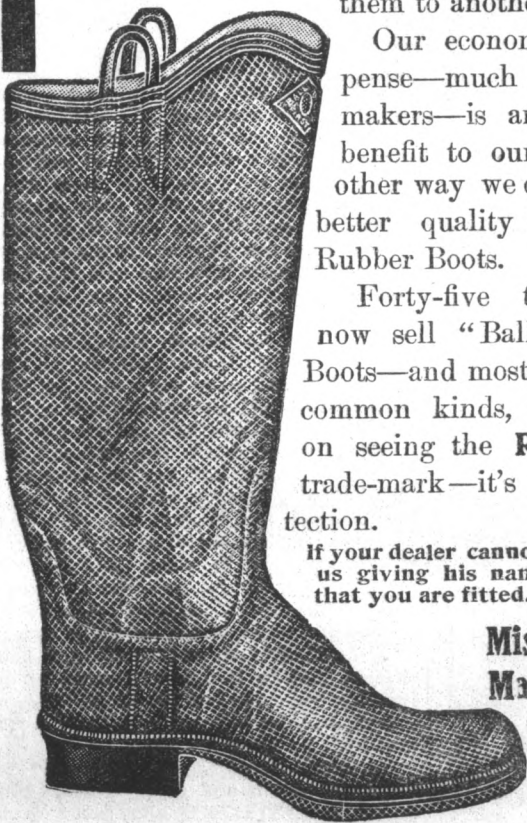
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in the sugar bowl and falling into his cup of weak tea; but hunger was stronger than fastidiousness, and the food tasted good, though he was annoyed by the woman's persistent inquisitiveness; for, not satisfied with the brief statement that he was tramping to the camps looking for work, she desired to know what circumstances had brought him to the position he was in. "You ought to be in some good job," she said kindly. "You ain't like the gen'ral run of young fellers that get to be hoboos. I'm afeard that you've ben drinkin' or you wouldn't be lookin' fer work, so I advise you to quit it afore it is too late."

Her words rang in his ears as he walked on. He was already being called a hobo and he wondered how long it would be before he would be a genuine one. He could hardly believe that he was the same neatly dressed, smooth-shaven fellow that had conversed with Grace Amidon a few days before. Now he was decidedly unkempt; he had not indulged in the luxury of a bath since the day he had lost his position. He needed a shave, his hair was getting long, his clothes were soiled and wrinkled, his pants had lost their crease and his shoes were old and rusty. His derby hat was the only article that he possessed which bore any look of respectability, and he wondered grimly how much longer he could subsist on "hand outs" with not a cent in his pocket until he could find work.

He slept in a barn that night, the farmer giving him a cold bite at the door, with every look of suspicion about him. doubtless afraid that the haggard young chap would steal the whole premises if allowed in the house. He split wood for a cold breakfast, the man growling at him on account of the way he used his axe. "You don't know how to use one decent," he said disgustedly. "Where have you been all your life that you hain't learned to split wood. Why, I could do better than that at ten year old. You'd better get a hump on yourself and find some work. I have to work fer what I get and there ain't no reason why a healthy feller like you shouldn't work every day in-stid of trompin' the country over beggin' at the doors."

Ned did not answer. It would have been no use to explain that he was looking for work; the man had rated him as a common tramp and would not have believed him. He was growing disheartened then, but late in the afternoon he fell in with a gang of wood choppers who were living in a shanty in a clearing, and they generously gave him a night's lodging, with supper and breakfast for what wood he could chop. They saw he was not used to it, but made no comment. He would have been glad to have stayed there a few days, working for his board if nothing else until the camps opened, but they had no authority to hire him, so he continued his weary way that day and the next, hearing discouraging news everywhere about the hard times and the impossibility of green men finding work in the woods at all; and as the camps would not open till snow fell, Ned finally decided that he would make his way towards home, taking work gladly if he could find anything to do; if not he would live as did other tramps, till the end came; and sometimes he hoped that it was not very far away.

He found all classes of people. Some gave him food and shelter without questioning, others regarded him with such distrust that nothing but his extreme weariness and gnawing hunger enabled him to accept their grudging hospitality. And so the second and third week passed without his earning one cent of money. He had found one place where the farmer told him he could help him with the fall work for a few days for his board, but at the end of three days, although Ned had done his best, he literally kicked him off the place, saying that he had dried up his cows and wasted more crops than he had gathered. He had accidentally broken the plow point when the man had set him at the fall plowing, which Ned had said he could do, and that had brought down upon his unlucky head the vials of the man's wrath. Once, at Bakapplein, Ned had tried the plowing, but in order to get rid of the task and to annoy Ben he had done it as badly as possible; but now, nursing the bitter, rankling thought in his bosom that he was a failure in everything he tried to do, he regretted, oh how bitterly, that he had never learned to do anything well. He had been a do-for-now always, and he believed that fatal habit would yet be the end of him.

The warm weather was succeeded by cold rains again and sharp winds. Ned caught a severe cold, and every day's

tramp, with insufficient food and weariness, added to it. He remembered that his mother had developed a sudden cold which brought on quick consumption, and he took a sort of melancholy pleasure in thinking that he was going the same way. His limbs dragged like lead, there was a sharp pain in his side and his head throbbed painfully with every move he made.

He no longer had any desire for food; the thought nauseated him; all he wanted was a chance to lie down and die undisturbed, so one mild night, when the harvest moon was filling the earth with splendor, he crawled into an open shed by the roadside and slept heavily all night. He dreamed that he was harvesting his wild oats in the light of the harvest moon. He seemed to see himself struggling up a long, steep hill with heavy sheaves of oats on his back. The hill was marked in large, blazing letters with the words "Do For Now," and the sheaves bore the legends of "Debt," "Taint," "Evil Associates," "Disease," "Weakened Will," "Debased Ideals" and "Loss of Reputation." He struggled to throw them off but they pressed the closer to him, and the names of them, written in letters of blood, danced before his eyes. And behind him came John King, carrying a huge basket and reaching after him with a long arm which clutched him no matter how hard he ran or how desperately he tried to hide from it. He woke, groaning in physical pain and mental anguish, to find the moon shining full upon him as if reading his very thoughts. Aye, it was the harvest moon with him in dead earnest, but after awhile he slept again, only to dream that the sheaves of wild oats were bound to him with bands of steel from which he could never free himself. They were clutching his vitals with a deadly grip and the moon was making horrible grimaces at him when he awoke suddenly to find himself dragged to his feet by the ungentle hand of a rough man who was bidding him take himself along out of the way as his shed was no place for drunks.

Ned stumbled blindly on. He was burning with fever. Coming to a little brook he knelt down and drank deeply. As he rose his blurred vision caught sight of a little pocketbook in the edge of the water. It was a child's purse containing but three cents, but he seized them as a drowning man grasps at a straw. They seemed to put new life into his veins for now he had a chance to send word to Merle.

He had kept his mother's ring, as he could not bring himself to part with that. He had it tied to a cord and he wore it concealed under his shirt. He had often thought of it the last few days, thinking moodily that if he died they could sell it and so bury him decently; but to sell it to provide bread for himself was something that he had never been able to do. But now in the joy of finding the three cents he forgot the ring, and with the strength given him from fever and his new resolution he walked on until he reached a small town. Inquiring his way to the post office he bought a stamped envelope. On his way he had picked up a torn scrap of dirty paper and using the pen at the desk he wrote a few lines hurriedly in a trembling hand. Then he addressed it, mailed it, and staggered out into the bright sunshine which seemed to pierce his aching eyeballs with shafts of fire.

He was conscious awhile later of trying to reach an inviting bench; then he knew that he fell to the ground; afterwards as one in a dream he realized that an important policeman had him by the collar and that the man who had ejected him from the shed was explaining how he had found him there drunk. Then he understood stupidly, as if they were referring to someone else, that he was to be taken to the county jail as a vagrant and a drunk. "A drunk," he laughed excitedly at those words and tried to tell the men how he had not tasted liquor in a hundred years—not since he left Bakapplein—but they only laughed at him, which made him furious. He laughed and talked still more excitedly until a physician came through the jeering crowd and solemnly informed them that they were laughing at a very sick man.

Then he knew no more for days, except that over his head there hung the glistening sword of Damocles. It was very sharp and the thread by which it was held had worn so thin and was so strained that he would try to cower under the bed clothes for fear it would fall any instant. And he would beg and beg of the strange, grave man and the white-capped nurse to take it away, but they would not, and so for days he watched its glittering edge

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as it swayed in the light until oblivion came and he knew no more.

Chapter XIV.—The Little Scrap of a Letter.

She stood by the mail-box at the gates of Bakapplein holding the little, soiled scrap of paper in her trembling fingers. Over and over again she read the penciled words until her brain reeled and her whole being felt as if turned to stone. A heavy weight seemed pressing on her brain and she gasped as if for breath; finally the tears broke the unnatural tension and, dropping in a heap on the pile of vivid leaves which the majestic maple had shed the day before, she sobbed undisturbedly until there were no more tears to fall; then rising to her feet she turned to go to the house.

Grandfather Beverly's mellow voice roused her from her agonized thoughts. He was walking briskly along the road towards the place, and as she waited he came to her side. "What is it, Merle?" he said kindly. "You look as if, like Christophorous, you were 'bearing the sins and sorrows of the world on your shoulders.'" "I am," she faltered. "Oh, Grandpa, you don't know what trouble I am in. It is about Ned. I am afraid that he is dead."

She thrust the scrap of paper into his hands and waited until he could put on his glasses. He read it aloud:

October 7.

Dear Merle:

I have walked 30 miles without food. I am broke. If you don't hear from me again you will know I am dead.

Your Bro.,

NED.

As he returned it he asked when she had heard from him last.

"Over a month ago," she answered. "It was August, and he wrote that he was doing well; then I heard nothing until yesterday, when a letter came from Grace Amidon, she and her father saw him. Mr. Amidon had business in that town—wasn't it strange he should? And they met Ned on the street, Grace wrote. Her letter made me so happy," she continued rapidly. "She said that Ned had dined with them, that he looked well—aside from being quite thin. And she wrote that he had changed for the better and was saving money. He was going to some other place, she did not say where, and she told me to expect to hear great things of Ned, that he was going to make his fortune and we would all be proud of him; and now this—" her words ended in a sob.

"Little Merle," said the old man kindly, "I think you will have to take Grace's word that Ned is all right. He could not have thought that he would frighten you so, or he would not have written such a note."

"He can't be all right," she interrupted, passionately. "Why, can't you see his heart is breaking with every word. Something dreadful must have happened to him to put him in such a state. See what a dirty piece of paper and how the words waver. Oh, it seems as if I shall die until I know what is the matter with him."

"Probably he was discouraged," he suggested. "He might not have found just what he wanted to do. I know young people often feel, if things are not coming their way just then, that they will die. You do so now at this moment, and probably if you were to write a letter you would use the very words you have used to me without thinking the effect they would have on the one to whom you were writing. So cheer up, my dear, and look on the bright side of things. In a day or so you will probably get a nice letter from Ned, who will not have entertained the slightest idea that he had worried you by such an untimely letter."

Merle shook her head. "I wish I could think as you do, Grandpa, but somehow I can't. Every word of that rings true." She kissed the torn bit of paper passionately. "Ned is dearer to me than my own life and I would die for him if I could."

"You will kill yourself by worrying and all to no purpose," he admonished firmly. "Why, Merle, listen to me a moment. I have seen a great deal more of life than you have, and there were times, when I was a young man, when the world looked very blue to me. Once I was on the point of writing home to my father that unless he sent me some money I should die. In fact, I did write the letter, but sober thoughts came to me afterwards and I burned it instead of mailing it. My son, Ned's father, occasionally wrote dispirited letters back to his wife; but she, God bless her, looked at them calmly and

never took them as seriously as you are doing with this one from Ned. And there was Bob Beverly. He had the wanderlust so highly developed that he often got out of funds while traveling from place to place; and once he wrote to us for money, but Ned said, 'no. He was a man and she a girl; therefore he should care for himself.' And thus it is the same way with Ned. He is capable of taking care of himself and earning money. There is plenty of work for those who wish it."

"For those that can do it," she cried. "But Ned don't know how to work with his hands and, what is worse, he never would learn. I know you mean well by your words, Grandpa, but I am so sure that Ned is in trouble that I am almost crazy."

In the bitterness of her grief and anxiety it had seemed to her at first that everyone would feel the same as she did about Ned; and she could not believe but that they would take his letter seriously. She carried it directly to Searls, who was in his office, and almost on her knees she begged him to let her have some money to send him, but he refused her, gently, though firmly.

Like Grandfather Beverly, he was disposed to believe Grace's side of the story. "Look at what she wrote," he said decidedly. "She did not say when she had seen him, but it was evidently just before she wrote," for Grace had written a rather disconnected, rambling letter, making it sound as if she had just been to that town and consequently had just seen Ned. With the easy optimism of youth, and full of her girlish love and belief in him, she had not doubted but that he was at once in a position of trust where he was receiving a good salary. Never having known anything but the smoothest side of life, where dollars were hers for the asking, she had no more idea of the difficulty of obtaining work when a person was unskilled than if such things were on another planet. Her one idea when writing the letter had been to give Merle as much faith in Ned as she had herself, so it was no wonder, with her letter dated the sixth, that everyone but Merle should believe her words instead of Ned's despairing message.

There had been ugly stories afloat concerning Ned the past few months. King had bided his time about telling it, but little by little it had leaked out that young Jackson had been discharged from his employ because of systematic stealing from his employer. King was careful in having it coupled with the fact that nothing but his respect for the Jackson family had kept him from prosecuting him. All of these reports had finally reached Searls' ear, and, although Ned had been told, they had kept them from Merle; but now, when she pressed her cousin for the money, and finally insisted on his reasons for refusing, he told her the stories about Ned, adding coldly that as he could not help but believe them, he would never aid him to a cent. He should never enter his house again until he proved himself worthy. He had no fellowship for a thief and especially one of his own blood who had disgraced the name of Jackson. Ned had made his own bed, consequently he must lie on it.

Merle shrank away from him like a wounded creature. Ned found her sobbing out her young heart in her bedroom. Why was everyone so cruel? she asked in her anguish. She knew, at least no amount of reasoning from Grace's letters could make her believe different—that Ned was dead or else dying. He never would have written such terrible words if he had not been in dire need of aid, and again and again she entreated Ned to influence Searls to send him some money.

But that Ned could not do. She, as well as the rest, was influenced by Grace's letter, and she did not believe that Ned, in one day, could have changed from an apparently prosperous young man, as Grace had written, to the abject creature his letter implied. So, while she strove to comfort the broken-hearted girl, she urged her to wait a few days, when probably a cheery letter would come from the wanderer. Like Searls, she was prone to believe that Ned had taken that method of making a dramatic appeal to their sympathies, and she was disposed to let the young man fight his own battles. And, although she did not tell Merle, she blamed Ned severely in her thoughts for so disturbing his sister, who bade fair to make herself really ill by worryment.

The wretched day came to an end at last. Every hour had seemed interminable as she imagined Ned in desperate straits, perhaps sick and suffering among

Some Good Reasons Why This Range Should Be In Your Kitchen

Ask Your Dealer To Show You the Greatest Improvement Ever Put In a Range

Before deciding upon a range, the wise woman will examine closely into the merits of the **Great Majestic**—the range with a reputation, built on honor—of the best materials—containing the greatest improvement ever put in a range.

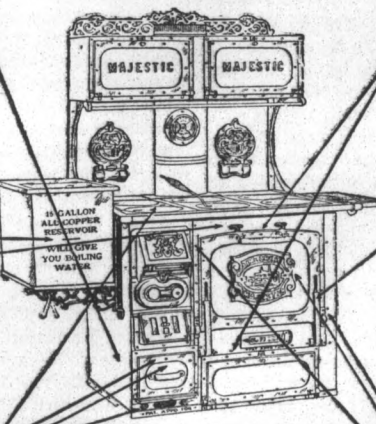
The Great and Grand MAJESTIC Malleable and Charcoal Iron RANGE A Perfect Baker and Fuel Saver

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The life of the body of a range marks the limit of its usefulness. Steel rusts and soon wears out. Charcoal Iron, by actual tests, resists rust, heat and crystallization 300 per cent greater than steel. The Majestic is the only range, the body of which is made entirely of charcoal iron—that's why a Majestic outlasts three ordinary ranges.

15 Gallon Reservoir
(pocket of which is stamped from one piece of copper) sets against fire—by turning lever, reservoir and frame moves away from fire pot to prevent boiling—exclusive Majestic feature.

The arch oven top adds strength and better circulation of the heat around the oven—another new Majestic feature.

The Top, all Doors and Frames made of malleable iron—they can't break and can be cold riveted.



Greatest Improvement
The first place a range gives out is above and below the oven at front of range. There is nothing there but a thin piece of steel on other ranges. The Majestic has malleable iron over the front of flue at both top and bottom of oven, thus insuring long wear at a point where other ranges are weakest.

Oven Door made of malleable iron—double lined protected by malleable iron stakes, working in slot—drops down to form rigid shelf. Can't break no matter how hard you allow it to fall.

The Majestic oven is lined with pure asbestos board—quarter inch thick—put there to stay—you can see it behind grating.

Open End Ash Pan saves shoveling ashes. Ventilated Ash Pit keeps floor from catching fire.

Oven riveted—air-tight like an engine boiler—keeps hot air in—cold air out—thus saving fuel.

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NO IRRIGATION HERE YEARLY RAINFALL 45 INCHES!!

strangers and dying in the end, unknown and unclaimed. No one felt as she did about him, so after awhile she shut herself up in her own room in her misery. She could not eat; it seemed as if food would choke her in the effort of swallowing, and she did not believe that she would ever be able to sleep until she knew how he was faring. Poor Merle! It had been a hard time for her during the ten months he had been away, although she had tried to extract what comfort she could from his letters and not to burden anyone with her forebodings regarding him. Manning's attention had been very marked. It was no secret that they were engaged, and often he grew impatient because she would not consent to an early marriage. He pleaded his love for her and also his needs, but she remained obdurate; "Ned has the first claim," had been her answer always, and although Nell and Searls, to say nothing of the rest of the people—all the Beverlys in fact—were anxious for the wedding, she had more than once threatened to break the engagement if they would not let her alone. While she loved Manning dearly, she had given her promise to Ned, which she would abide by as long as necessary. But in her misery that day her first thought was of Manning. He would not fail her in her trouble, she knew, but if he did—he would have to give her up, then, for she would go to Ned if she walked every step of the way.

She was calm, but intensely sure of herself, when she went down the walk to meet him that beautiful evening. She was no child, but a woman capable of the deepest feelings and the strongest resolutions. Usually gentle, her sweet flower-like face and deep brown eyes gave no hint of the unyielding principles which were founded in the very depths of her nature. She was a Jackson, and consequently as immovable as a rock in what she deemed was right.

He had heard the whole story from his grandfather and naturally he shared the opinion that Ned was all right, in reality; that, probably a little discouraged at not finding work readily, he had written the letter. He remembered that when Ned had come to his place after his unsavory adventure on the ice he had a spell of extreme depression of spirits but which finally wore off; so he essayed to reassure Merle by telling her of that phase of his nature, but she would not be comforted. "If you loved him as I do—if he was your brother—you would believe every word of it," she said entreatingly, for it hurt her cruelly that he should judge him as harshly as had the others. "I thought that you would see it as I do, Manning," she said hopelessly. "I was going to appeal to you to help him but, feeling the way you do, you would probably not do so any more than will Searls."

Manning hesitated. In his heart he did not believe the young fellow needed help. He knew the stories which were circulating and he believed them. "Why will not Searls help?" he parried to gain time.

Then she told him the dreadful things which Searls had told her that day. "Every word cut like a knife," she said with difficulty. "I can't, I won't, believe that he did as bad as they say he did, though I know there was something wrong—I knew it at the time. Say you don't believe them either, Manning," she implored, feeling as if the world was sinking from beneath her with no one to say a good word for Ned.

It was hard for Manning to answer her but he spoke truthfully: "I have to believe them, Merle. I can't do otherwise." Then when she cried out in anguish he told her of many reasons why he did. He told of their boyhood games when Ned had always cheated; he would never play fair; he related to her the pranks which Ned had boasted of playing off in school—how he had cribbed and cheated in his lessons, taking every advantage he could to get marks without earning them. "And Merle," he said finally, "I cannot help but believe these things of Ned, for a man who will cheat at checkers will cheat in business every time."

"Then you will not help him?" she asked at length.

"What can I do? What is it you wish me to do? You know that I would do everything in my power to give you any comfort if it was necessary, but I know that you are borrowing unnecessary trouble. He is a man and can take care of himself; you are a young girl and need someone to care for you. And how long will it be before you will give me the right, Merle? I need you, oh, how I need you," he urged, "but my need is not one-tenth of my love. How long will it be before you will come to Old Beverly?"

"I have just this to say, Manning," she answered in a low tone which vibrated with the Jackson firmness, "I shall never come to you—never, under any consideration whatever, if you turn against Ned. If you fail me as the rest have done I shall take my own personal keepsakes—the jewelry which was our mother's, and Ned has as much right to them as have I—and I will sell them for money to take me to him. I will go to him even if Searls should forbid my ever entering his doors again. I will go, if I never see you again. That is all. Ned is my brother. I am his sister, and until I know that he does not need me I shall never think of marriage."

The young man's head whirled. He had not properly estimated the depths of her love for her brother. Now he saw instantly that the only chance he had of ever winning her was by assisting Ned, and accordingly he answered her passionate outburst gently by offering to send Ned some money himself. He would write out a check that night for fifty dollars, which Merle could send the next day, if that would be of any help.

The girl broke down in a flood of joyful tears. With that great burden lifted from her heart she could begin to see hope ahead. Perhaps he was simply discouraged and, if so, that money would help him to start anew. Then, feeling pity for Manning, whose love for her she knew was being tested to its utmost, she promised that as soon as she was perfectly satisfied that Ned was making his way in the world she would marry him without further delay.

After Manning had gone on his way rejoicing, she went to her room and there wrote a long letter to Ned, for the precious check must go by the early mail. She wrote all the pleasant news of the two farms. Manning had had a first-class fruit year; he was making Old Beverly pay splendidly. Baby Nell was a little beauty and Grandfather as smart as ever. Bakapplein was prosperous as usual. Yvonne still talked of him and hoped he would return. Little Martha was developing into a lovely child and they were all very fond of her. Then she wrote of the Beverly young people. There was another boy at Bob's, named—after Grandfather Beverly—simply John Beverly, and the old man was greatly pleased. Madeline, so she wrote in her bright, chatty way, was at her old post as instructor in a large college, with prospect of being one of the faculty another year. Kenton (then Dr. Beverly) had a position on the large stock farm of Burley & Barton, near Boston, and Carlos was in his last year at college. So the letter ran, the girl doing her best to make it newsy and cheerful. She told Ned how much they all missed him; of Grace's encouraging letter about him, and she begged him to write at once and tell all about himself as she could not feel easy until she knew. She did not explain about the money; he could tell that by the check, as she did not wish to say anything about Searls refusing him aid.

She gave it herself to the postman that morning, and as she stood watching him drive away with it Old Joe Green approached her. He had heard, from Ben, the story about Ned, and he wished to know what there was to be known. He listened quietly till she had finished, then he said, emphatically, that he believed Ned was in want. "I can't help nor believin' on it," he said sincerely. "It sounds true, and I know that Ned Jackson would never have writ nothin' like that if he hadn't meant every word on it. Why, I'd a believed it if nobody else in the hull world would, after the way he saved my Joe. He is a therrerbred, that boy is, and though he may be down on his luck a little now he will come out all right in the end. Therrerbreds allers dew," he added sadly; "they ain't like scrubs that come frum nothin' and go back to nothin'." So yew cheer up, Miss Merle, an' if yew know any time that Ned needs some money I'll send him what leetle I've got at any time."

She accepted his offer joyfully. "I am so glad there is one person in the world who believes in him, too. Why, he never wrote the name of the place in his letter—we had to tell that from the postmark, so I know he must have been sick. But I feel so sure that my letter and money will reach him all right that I am almost happy again."

"Shore they will," comforted Joe. "Ned will come out at the top of the heap yet," winking knowingly. "I hev a way of shettin' King's mouth which I shall dew afore long. He will find that it don't pay to talk tew much about the absent. He and Jimmy Malley air gittin' most tew

smart fer their own good. Well, I must like erlong. Young Joe didn't come home last night," he added soberly.

"He didn't. Where was he?" she asked, her suspicions confirmed by the look of distress on the old man's face.

"He got along as fur as Manning's. He tuk him in and let him sleep in the barn, as he wuz tew full to know whar he wuz. He did that to keep the old woman frum knowin' about him. I fixed up a yarn that he wuz likely delayed in town over the load, but I don't think I fooled her much, though I try hard to, about what Joe does. Thar ain't no use in harrerin' her up about his misdeeds. He got the push down the hill afore he wuz born, and atter that at the cider barrel tew hum, so I don't blame him a mite. I heered a man say wunst in camp-meetin' that it wuz easier to stop an express train with a wheel barrer than it wuz to stop a man frum drinkin' ef he begun afore he wuz eighteen; so I don't spose Joe will ever be stopped. I talk with Old Man Beverly about sech things. Wunst he ast me if it wasn't a comfort uv' old age to be looked upon as a Nestor. I didn't rightly know what he meant, dew yew?" he asked, scratching his head perplexedly.

"A Nestor," she repeated, "why, yes, Joe, that is an old man who is wise. That is what Grandpa Beverly is; he is the Nestor of West Winthrop."

"Wall, he is 'nester' shore enough," grinned Joe, still adhering to his definition of the word. "But I allers supposed the nesters was the wimmin' folks who kept the homes a runnin' and kep' families together; but that is jest what he has done ever since Nell's mother died when Carlos was born. He has been a nester all the time. But it seems ter me," he chuckled, "that you will have to take his place over there perty soon as a 'nester.' Manning needs a wife mighty bad."

Merle laughed and returned to the house, wondering how many days would elapse before she could possibly hear from Ned; but day followed day and no word came; and, after two weeks' waiting, in which time she had begun to grow thin and pale from ceaseless anxiety, she wrote to the postmaster about him, but with his answer came her letter marked "undelivered," and the postmaster wrote briefly that no such person had been known of around there. Then Merle gave him up for dead, and as the days passed she crept around the house, a thin, silent ghost of her former happy self. Manning was told that he must wait at least six months more. She told him that when she returned the unused check, and his pity for her was so great that he did not urge her to do otherwise; but in his heart he did not believe that Ned was dead; he thought he had gotten into some scrape again and was lying low until it should blow over, and that opinion was held by Searls and Nell. They did not tell their suspicions to Merle, though they tried to persuade her into believing he was still alive, but when hope is dead the heart will refuse to believe.

(To be continued.)

LETTERS.

BY MRS. J. J. DAVIS.

In the time of deepest trouble,
When our hearts are crushed with grief,
Then the letters from our dear ones
Are indeed a sweet relief.

Some will touch, with gentle fingers,
Wounds which are so hard to heal;
Others give us just the counsel
To remove the weight we feel.

Blessed letters! how I love them,
And I often steal away
Just to look at words of comfort
Penned by dear ones far away.

Some with care are neatly written;
Others, blotted o'er with tears;
All express, in words of comfort,
Loving friendship tried for years.

When our hearts are torn and bleeding,
And the world looks dark as night,
Then they come to give us courage—
White-winged messengers of light.

Precious letters, how I prize them,
Bringing kindly words of cheer;
May the Lord just give me wisdom
To return the favors here.

When our journey long is ended,
And we reach the other shore,
Will the letters from our dear ones
Reach us as they have before?

"Not with whiteness marred by postmen,
Not with stamp all blotted o'er,"
But will not their loving message
Reach us on the other shore?

Surely Heaven, with all its brightness,
Would not be a perfect place
If we couldn't hear from dear ones
Toiling on in life's hard race.

IT'S FOOD

That Restores and Makes Health Possible.

There are stomach specialists as well as eye and ear and other specialists.

One of these told a young lady, of New Brunswick, N. J., to quit medicines and eat Grape-Nuts. She says:

"For about 12 months I suffered severely with gastritis. I was unable to retain much of anything on my stomach, and consequently was compelled to give up my occupation."

"I took quantities of medicine, and had an idea I was dieting, but I continued to suffer, and soon lost 15 pounds in weight. I was depressed in spirits and lost interest in everything generally. My mind was so affected that it was impossible to become interested in even the lightest reading matter."

"After suffering for months I decided to go to a stomach specialist. He put me on Grape-Nuts and my health began to improve immediately. It was the keynote of a new life."

"I found that I had been eating too much starchy food which I did not digest, and that the cereals which I had tried had been too heavy. I soon proved that it is not the quantity of food that one eats, but the quality."

"In a few weeks I was able to go back to my old business of doing clerical work. I have continued to eat Grape-Nuts for both the morning and evening meal. I wake in the morning with a clear mind and feel rested. I regained my lost weight in a short time. I am well and happy again and owe it to Grape-Nuts." Name given by Postum Co., Battle Creek, Mich.

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

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



Our experts travel
about from one plantation
to another, they watch the
growth of the rich Burley
plant at every stage, they
study the quality of the
soil and the care of pro-
duction. They select only
the middle leaves of the
choicest crops and then mature
them for two whole years, and

the result is — Velvet, the pipe
tobacco that has no equal for
fragrance and smooth, cool-
smoking qualities. A tobacco
that cannot bite the tenderest
tongue.
Smoke Velvet and you will be
enthusiastic.

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is sold out, we'll send you a
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Since 1795 Dr. Isaac Thompson's Celebrated EYE WATER

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GRANGE

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

THE MARCH PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Opening song.
Current events.
Recitation.
Dairying. II—Marketing good milk.
Talks by a producer and a consumer.
Song, "Three Crows," page 116, Song Knapsack.
Reading, "Prayer of the Horse," in charge of steward.
Song, "Frogs at School," page 16, Song Knapsack.
Fifteen minutes with the animals.
Song, "Shepherdess," page 11, Grange Melodies.

Suggestions for Second Meeting.

Song.
Roll call, responded to by each naming a piece of news, either of public or local affairs.
Home Nursing. II—Health Hints for All. In charge of Woman's Work Committee.
Duet.
What does the farmer need most—more labor, less land, or more education?
Song, by chorus.
Self serve luncheon, in charge of young ladies.

THE RURAL SCHOOL A SOCIAL CENTER.

"The old order changeth giving place to the new," but the new order must demonstrate its pressing necessity before the old will vacate.

"Are you going to the farmers' institute tonight?" I heard one farmer ask another. "No," said the farmer addressed, "for if I go there will be no comfortable place for my team, and wife and I would likely have to stand during the meeting." Herein lies the way to the farmers' centralized township school with a large audience room with comfortable sheds for teams, a social center of community life. "New occasions teach new duties." The new occasion is here, and we must welcome, make place for it, if we keep abreast with progress.

Recently I accompanied Commissioner of Schools Charles A. Rinehart, of Mason county, in a six-days' institute about his county. It was an institute on wheels and, in certain townships at a central point, the patrons, teachers, pupils and school officers were assembled and in one instance only was the hall large enough to accommodate those attending. The success of the meetings was greatly discounted through inconvenient, inadequate accommodations for the folks attending and the teams that conveyed them. There is still a large element of the cave man in our makeup. We prefer to suffer the ills of uncomfortable surroundings rather come; the pupils' commencement has attributable to the inertia of human nature. But the farmers' institute is here; the teachers and farmers' association has come; the pupils' commencement has arrived, and the inertia is giving way to the farmers' social center school with its large audience hall for farmers' institutes, Grange institutes and conferences, rural lecture courses, rural commencement exercises and school and social entertainments. In this farmers' township social center school the elements of agriculture will be taught. With this kind of a school we shall stop marking time and advance. We shall eliminate from our teaching of arithmetic cube root and study the raising of farm roots; we shall care more for bringing about a time that shall attract and hold the boys and girls on the farm than for longitude and time; we shall do our duty by the boys and girls rather than duo-decimals.

In the last few years we have multiplied consumers by a large per cent and reduced the units of production of agricultural necessities. We must multiply producers and increase the land-power of production. There are now no great new land areas to be opened and made into farms to take the place of the abandoned farms of the east. We face the problem of getting larger returns from the tillable lands now under cultivation. The Michigan Agricultural College is doing its full share of this work, but the farmers of this country must awaken to the importance of the problem they alone can solve. We must have the farmers' centralized social center school for better education, for teaching the elements of agriculture, for a sane, safe entertainment for the boys and girls on the farm, because wholesome entertainment is a necessity

of youth, and if it cannot be had in the country, youth will seek it where it can be had. The social center school is here now in some communities, and, hand in hand with the Grange, is meeting expectations and demands for a socialized rural society. Will you "help it on, help it on?"
Muskegon Co. D. E. McClure.

THE GRANGE IN OTHER STATES.

Ohio State Grange held its 38th annual session at Zanesville in December last. Eighty of the 88 counties of the state were represented. State Master Laylin, in his annual address, stated that the order in Ohio is making steady, substantial growth, 43 Granges having been added during the year—28 new ones, 8 reorganized, 3 Pomona and 4 Juveniles—and 4,799 new members were gained, this being the greatest annual gain in 33 years. A large number of Ohio Granges own their halls; quite a number were built last year. More Grange fairs were held than in any previous year, and the demand for Grange speakers for picnics was unprecedented. Many county fair organizations provided halls for Grange exhibits, and provided Grange speakers as attractions. The secretary's report showed that the total receipts last year were \$12,377.57, itemized as follows: \$9,735.80 from membership dues and initiation fees; \$2,091.03 from sundry sources; \$438.74 from sale of supplies, and \$112 from sixth degree fees. The expenditures totaled \$11,430.81, of which \$1,549.30 was paid to the National Grange for membership dues, leaving a net surplus of \$946.76. The treasurer reported the total resources of the State Grange as \$26,463.18, divided thus: Bonds, \$14,000; mortgage notes, \$6,500; cash, \$5,963.18. The superintendent of Juvenile Granges reported that Ohio now has 15 of these Granges, four having been organized the past year. The Juvenile membership totals about 300 and the children are very loyal to their obligations and take intense pride in the ritualistic work. During the session about 25 new localities indicated a desire to organize Juveniles in the near future. About 130 Patrons took the sixth or State Grange degree. This year's session will be held at Columbus in connection with the annual meeting of the National Grange.

Proportional representation in the National Grange was heartily endorsed by Pennsylvania State Grange at its last annual meeting, the delegates reaffirming their position in favor of an additional vote for every 1,000 members, the votes to be cast by the state master. The Grange also went on record as favoring the following: Conservation of the state's natural resources, prohibition of manufacture and sale of colored oleo, reduction of express rates, hunters' license not to apply to hunting on one's own farm, against enforced slaughter of so-called tuberculous cows in the present state of unreliability of the test, school books at cost, grading of rural schools, against increase of newspaper and magazine postage, removal of German export tariff on potash, statement of actual per cent of fertilizer composition, and woman's suffrage. The Grange's good financial condition is indicated by the following report: Receipts for the year, \$19,110.82, itemized thus: Fees and dues, \$18,860.16; interest on invested funds, \$250.66. Expenditures, \$15,867.66. Excess of receipts over expenditures, \$3,243.16. Total funds in the treasury: General fund, \$20,721.96; surplus, \$3,294.03; local option fund, \$18.59; total, \$24,201.58.

During the past year six new Granges have been organized in Maine, and one re-organized. There are now 440 Granges in the state, with a membership of 57,416 Patrons. The largest Grange, Houlton, has a membership of 1,018, while 66 Granges have over 200 members.

A decided stand against the proposed increase of postage rates on the popular magazines and farm journals was taken by the State Granges of Maine and Pennsylvania at their recent annual meetings. The Maine resolutions declare that these magazines and journals "form one of the best and most potent forces for the betterment of the farmer's home and the education of the people through the rural mails."

Gratiot Co. Pomona met in joint session with the Gratiot Co. Teachers' Assn., at Ithaca, Feb. 11, with a good attendance. Prof. M. A. Cobb, of Central Michigan Normal school, gave a thoroughly practical talk on "Agriculture in our Schools." He recommended the use of bulletins issued by the state agricultural experiment station in place of the expensive text books adopted in some of our schools. Hon. Herbert F. Baker, speaker of the house of representatives, spoke on legislative matters. He suggested it would be beneficial for farmers and business men to act together and see that their representatives are advised as to what is wanted. The interests of the business men and farmers of a community are identical.

COMING EVENTS.

Pomona Meetings.

Arenac Co., with Bay Grange, at Arenac, Friday, Feb. 24. (Postponed from Feb. 17). Geo. B. Horton, state speaker. Installation of officers.
Shiawassee County, with Bennington Grange, at Bennington, Tuesday, Feb. 28.

FARMERS' CLUBS

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—B. A. Holden, Wixom.
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Associational Motto.—

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

THE FARMER OF THE FUTURE.

Paper read by J. C. McDowell, of the U. S. Department of Agriculture, before the State Association of Farmers' Clubs.

This is a wonderful country. With our extensive iron and coal mines, our western forests, our apparently inexhaustible water power, power as yet but little used, our almost unlimited agricultural resources and our ninety millions of intelligent people, we certainly have the foundation for remarkable achievement and have every prospect for a national future of great brilliancy. Let us not forget, however, that though our resources in forest, field and water power may appear to be almost without limit, this is not really true. We are already beginning to see the end of our great northern forests. Our water powers are being concentrated, in the hands of the few, and the robbers of the soil who like to style themselves successful farmers are rapidly depleting the soils of the middle west as they have already greatly decreased the productiveness of many sections in the east. If such practices are to go on, unchecked, if we, as tillers of the soil, are to dissipate our fertility and allow the produce of our phosphate mines to be exported to Europe, then dark indeed must be the prospect for the farmer of the future.

I wish you could have been with me the past summer as I traveled through parts of New York and the New England states. While inspecting the so-called abandoned farms of New York state I drove by team for three days, and during that time I saw only two men at work in the fields. I asked, "Where are the farmers?" and was told that they were in town working for a dollar and a half a day. This was in the central part of the state, where the soil had at one time been good, and where the railroad facilities are among the best to be found anywhere in the United States. Many of these farms can be bought now for one-half what it would cost to put up the buildings. Some of them are hilly and stony and in other ways unsatisfactory, but I saw a great number of abandoned farms that were not at all undesirable. What is the trouble? What has brought about this condition of affairs? I do not know what is the trouble in every case, but in the great majority of them the present conditions have been brought about by bad systems of farming.

Our Department is doing what it can to bring back the old-time productiveness to these soils, and is making marked progress; but how much better would it have been if the fertility had never been allowed to run low. After adding lime to correct the acidity of these soils, it has been possible to grow a fair crop of buckwheat which is plowed under as green manure. This adds humus to the soil, and brings it into better physical condition. Next legumes and cultivated crops are grown, which gradually puts the land on a paying basis. All this takes time and capital, and the solution of the problem requires all the knowledge and skill of men who have made it a study for years.

My trip through the east was for the purpose of gaining information that would assist us in improving our western agriculture, and I learned much that will be of use to me in my work, but the most impressive thing I saw was the deplorable condition in which I found some of these abandoned farms. I realized the danger into which we are drifting if we are to go on cropping our western soils in the careless way in which we have started. But if the farmer of the present will do his duty by his soil and by his country, we need have no fear concerning the prosperity of the generation that is to follow us.

(Continued next week.)

CLUB DISCUSSIONS.

Celebrate 25th Birthday of Club.—The regular meeting of the Burton Farmers' Club was held Wednesday, Feb. 8, at the home of Mr. and Mrs. Clayton E. Potter, and a very profitable meeting enjoyed. This meeting was the 25th birthday of the Club. Mrs. C. E. Potter read a short history of it. It was organized at the home of Mr. and Mrs. Charles R. Woodin, Feb. 4, 1886. Of the ten families who joined the Club that day only Mrs. Potter is still a member. This was the first Club to be organized in the county of Shiawassee and there were but few in the state. For the first year or two we corresponded with the Wales and Kimball Club, of St. Clair county, receiving from them much help and encouragement. The writer would like to hear from this Club if it is still in existence or from any member who used to belong to it. She would also like to hear from any Club in the state which is older than the Burton Farmers' Club. In the 25 years over 60 families have been members. Twenty-six members have died during that time. At present the Club is in a flourishing condition with 19 families on the roll.—Mrs. Clayton E. Potter, Sec.

Discuss Reciprocity.—The Wixom Farmers' Club was held at the hall, Feb. 8, being entertained by Mr. and Mrs. B. D. Burch and Mr. and Mrs. H. E. Smith. Seventy persons at dinner. At two o'clock the meeting was called to order in the usual manner. Mr. B. A. Holden gave us a very interesting and instructive talk on food value and chemical analysis of corn, after which the question box was opened. There were ten questions, seven of them were on the subject, "Reciprocity with Canada." After being freely discussed a resolution was presented "that we utterly and entirely oppose reciprocity with Canada," and it would have carried but was loaded down with amendments that made it objectionable, so it was tabled, to be continued at the next meeting.—Mrs. R. D. Stephens, Cor. Sec.

The Health of the Family.—The Troy Farmers' Club was entertained in February at "Sunnycrest," the home of Mr. and Mrs. H. B. Wattles. This was the first meeting with Mr. and Mrs. Wattles since the erection of their spacious and very pleasantly situated new farm home and the large attendance required the laying of the dinner tables two or three times. Meanwhile, members and invited guests were visiting, and looking over the new home, which is equipped with water supply, steam heat, electric lights, etc. The great attraction, however, was the herd of Jersey dairy cows and growing young stock in the modern and convenient stables. The excellent dinner over, the meeting was called to order by the president. The topic, "What contributes most to the health of the family," was discussed. Mrs. I. H. McCotter thought the sanitary condition of the home and all its surroundings should be right. Regular hours and habits, maintaining a steady self-control, avoiding undue excitement, all suggest a line of conduct that would do much to promote the good health and welfare of the family.

Soil Fertility.—The topic, "How I preserve the fertility of my farm," and, "Does it pay the average farmer to buy commercial fertilizer?" were fully considered. George Reynolds saying that, in addition to all the fertilizing material available on the farm, he thought that the yield was sufficiently increased by the use of commercial fertilizer to make its use quite profitable. E. A. Starr stated that his plan was to spread barnyard manure on clover sod, which seemed to make the land very moist and mellow, and cultivation was much easier. Commercial fertilizers he spread broadcast, using from 200 to 1,000 lbs. per acre according to crop to be grown. Had used about 90 tons the season of 1910. J. J. Snook thought the first thing to do to conserve the fertility of the farm was to provide a thorough system of underdrainage wherever there was evidence of too much moisture in the soil. Had drained three farms. I. H. McCotter also urged drainage as very important in any plan of improving the farm. Also at "Oakview," the testing and stock seed farms of D. M. Ferry & Co., they had taken up stock feeding, both cattle and sheep, and though the market might be unfavorable at either the time of buying or selling, or both. They consider it good business policy to preserve and increase the fertility of the farm. As to commercial fertilizers, Mr. McCotter said that at "Oakview" the various fertilizing materials were purchased and with tankage for a base, mixtures were made such as seemed suitable for different plants and crops. Experiments showed that the soil is depleted of quite a large amount of nitrogen, potash and phosphorus, representing a large sum of money, according to the amount and kind of crop grown. H. B. Wattles thought there was no permanent injury in pasturing new seeding of clover. Did not know as we could prevent a certain amount of loss in the management of barnyard manure; if drawn directly to the land it is subject to being washed away to the ditches, roadsides and neighboring farms. A paper by Mrs. F. S. Schoch on the "Training and Education of Children," was excellent in thought and precept.

The Question Box was well supplied with timely and pertinent inquiries, among them, the working of convicts on the highways; whether reciprocal trade relations with Canada were beneficial or otherwise; do the hogs on the farm receive due consideration; the township school system, etc., all of which were considered with much interest and varying points of view. The Club adjourned to meet at the home of Mr. and Mrs. Wm. Hill on March 4.—Cor. Sec.

South Royalton, Vt. Gentleman:—Received my watch in ten pigs (would have been six months old do anything with them. They are always up and ready to go. Everybody wants to know what keeps them in such good condition and I tell them it is your Stock Tonic that does it. I have a team that is equal to your champion team on your envelopes. They are fine and eat Stock Tonic three times a day. I thank you for your past favors, and remain,
 Yours respectfully, Frank Rand. Your agent, W. M. Randle.
 Wilbur Stock Food Co., Milwaukee, Wis. will do as much as yours. I have sold



I Want to Send You This \$3.50 Pail Free

I want you to know for yourself why

WILBUR'S STOCK TONIC

is fed by 500,000 stock raisers daily. I want you to see what it does for your horses, your milch cows, your hogs, your sheep and your poultry.

I want to prove to you beyond all doubt, that Wilbur's Stock Tonic is a wonderful feed saver, fattener and positive preventive of disease.

I want you to find out by actual test that my tonic makes money for you every time you feed it. That's why I'll send this big pail absolutely free to you and to every reader of this paper, where we have no agent, who fills out and sends me the coupon shown below.

I don't want you to pay me a cent for this big full size \$3.50 pail, now or at any other time.

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It is not a premium, but a gift, and my object in giving it to you is to let you prove to

your own satisfaction that it is a feed saver and money maker for you. IS MY OFFER FAIR?

Do you risk one cent by accepting this big pail free? Is it worth a two-cent stamp? If so, just fill out the coupon below, AND MAIL TODAY.

What Others Say

Williamsport Pa., May 17, 1910
 Wilbur Stock Food Co., Milwaukee, Wis.
 Gentlemen:—We have used one pail of your food for our two horses. It saved the life of one of them after everything else failed. Please give us price and terms on pails. Yours,
 BOYS' INDUSTRIAL HOME,
 T. P. S. Wilson, Mgr.

Arkansas City, Kans., Apr. 5, 1910.
 Wilbur Stock Food Co., Milwaukee, Wis.
 Gentlemen:—Would like to know what the prices on one thousand pound lots would be. Have been feeding it about two months and think it is all it is claimed to be. Hoping to hear from you soon soon, I am,
 Respectfully,
 BERT WILHELM, R.F.D. No. 6

Stephens, Ark., Dec. 17, 1909.

Wilbur Stock Food Co., Milwaukee, Wis.
 Dear Sirs:—You will find herewith enclosed money for the five pails of tonic. Will say, it's all you claim for it and more. I tried it on a sick calf which was nearly dead with sores. The first dose relieved it and now it is alright. It is good for all kinds of stock. I found it cannot be beat. It is a God's blessing.
 Yours truly,
 J. J. CARROLL.

J. P. Wilbur President

WILBUR STOCK FOOD CO. 265 Huron St., Milwaukee, Wis.

FREE \$3.50 PAIL COUPON

F. P. WILBUR, President,
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Please send me the \$3.50 pail of Wilbur's Stock Tonic free of charge.

I own _____ horses _____ cattle _____ hogs _____ poultry.

My Name _____

P. O. _____ R. F. D. _____

Freight Station _____ State _____