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Success Versus Failure With Alfalfa

I AM more than ever convinced that every man whose soil is adapted to the production of alfalfa, should at once prepare to grow it. I also believe that in any case where land can be made to produce this important plant without too great expense of time and money, the required preparation should be made. We can get much enthusiasm by reading along a certain line, but experience and observation go much farther in increasing our interest and influencing our practice.

There is going to be a revival of interest in alfalfa this spring, for the fields in which this great plant is already growing are looking very promising. There are many successful growers of alfalfa in this county now, and more are sure to follow their example each year. A few of these growers may have succeeded by chance, but the majority of them have gone at this work with definite knowledge of the needs of the crop.

In a field sown last summer, by a neighbor of the writer, is a remarkable demonstration of the value of lime. Two years ago he made a light application of ground limestone, only a ton to the acre, over a small part of the field. He will have to plow it up and try again, but if even that light sowing of limestone had covered the entire area, he would have cut a fine lot of alfalfa this year. The loss of so much good hay is quite a price to pay for this neglect, but it is simply one of those "costly experience lessons" that we all must take now and then.

One can see just where the application of lime stopped in that field. It is a "still small voice" but it is a telling argument for lime where it is needed. Of course, all land does not need liming for alfalfa. If we test the soil for acidity and find none, we may safely conclude that no application of lime is necessary, but if the soil is acid, it will not probably be worth our while to seed to alfalfa until we have corrected that condition.

The ground lime rock acts slowly, and it may take a year or more to sweeten a very sour soil with it alone, but if we so desire we can make a light application of hydrated lime and greatly hasten the neutralizing of the acid condition. Generally speaking, hydrated lime is not the most economical form to buy, but it is much more readily available than the ground lime rock, and if quick results are required, is very useful. Three hundred pounds per acre is probably sufficient

on the average acid soil. At the same time two or more tons of the ground limestone should be added, which will insure plenty of calcium to answer the needs of the alfalfa for several years.

The price of the ground limestone seems to be getting less as time passes, though it probably will not go much lower. It should be shipped in bulk, as it costs about a dollar per ton to sack it, and there is no particular advantage in having it sacked. It is easily shoveled out of the car into a wagon box, and there is very little dust to bother one. If a carload is not needed by a single individual, several persons can club together and send for the lime, each taking what he wants when it arrives.

Ground limestone can be easily spread from a manure spreader. Suppose you wish to apply two tons per acre. Adjust the spreader so that it will spread five loads per acre, and put 800 pounds of the ground limestone into it. If you can set your spreader to distribute a smaller amount than five loads, do so, as it

available than the ground limestone and should be used unless the supply is too far distant. Marl is usually from 30 to 60 per cent water, and if it must be hauled for 10 or 12 miles, it is a question if one could afford to do it, when the rock can be purchased so cheaply.

But lime will not insure a good stand of alfalfa on every field. The alfalfa field must be well drained. The water table must not come too near to the surface, and there must not be rock nor hardpan just a little way from the top of the ground. Then, too, if we expect good crops of hay, the soil must be well supplied with organic matter, and must be reasonably fertile. There have been many failures in trying to get alfalfa to grow on land where nothing else seemed to do well. Reader, if you have a field that is not yielding good crops, and you want to make it grow something that will pay out, don't sow that land to alfalfa, at least not until you have so far increased its producing power as to enable you to grow a good crop

ground that was not limed. There the alfalfa failed to do anything. The circumstance was not remarkable. In fact, it was similar to the experiences of many others, but the man at once concluded that he had made a discovery. He reasoned from this one instance, that all land needed lime, and that no land needed inoculation. If he had kept his bad reasoning to himself, as many people do the good things that they might pass along, it would have done no harm, providing his land was all alike. But he published it, and because he did, a number of men may fail to inoculate and undoubtedly part of them will lose their stand in consequence.

The fact is that some soils need lime and inoculation, some need only lime, and others need neither. We can test for lime, but we can not test for inoculation. It matters little to us, however, for we can get the pure culture at our experiment station or from commercial laboratories.

Thorough preparation of the seedbed is a matter of great importance.

If the young plants have to struggle with the weeds all summer they will hardly make a successful stand, even if other conditions are right. If the soil is not compact just below the surface, much of the seed will not make a satisfactory growth.

It is not necessary to sow as much seed per acre as was once the practice. If the soil is very fertile, the sowing of a large amount of seed, while not necessary, does not result so badly, but if the soil is rather light, and if moisture and fertility are lacking, all the plants are weakened before the stand has been thinned in the natural process of elimination.

Alfalfa as a feed has no equal so far as we know. We have all read much about it, yet to see the results appeals to us in a different way. It is really wonderful how much milk can be produced by feeding alfalfa and ensilage.

It has been our privilege to note the results of this practice in a number of cases this past winter, and we are convinced that with alfalfa hay and good ensilage, the grain bill can be cut down 75 per cent. No dairyman can afford to get along without this valuable crop if he can grow it.

A small field for a trial is the way to test the matter out. Fit the field just as well as it can be fitted. Test it carefully for lime. If it needs lime, do not hesitate to apply it. Take no

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Fourteen Acres of Alfalfa which Yielded 50 Tons of Hay at Three Cuttings for O. L. Crofoot, Oceana Co.

will save you some time in driving back to your pile of lime rock. Of course, the smaller amount spread by the machine, per acre, the more you will need to load into it at a time. It will work better if some coarse litter is put in the bottom of the spreader before loading in the lime. This will be found a very satisfactory way of spreading the lime, though a machine for that purpose might do the work faster. Sometimes it is simply spread from the wagon, or sleigh with shovels, and while it can not be spread as evenly in this way, still it will answer if one has neither a spreader nor a machine for sowing it.

There are hundreds of marl beds in Michigan, where almost any amount of lime may be had at a cost that is only nominal. Marl is more quickly

of any ordinary farm product there. Michigan has a great deal of light land that we heartily wish might grow large crops of alfalfa, but it simply will not do so until the organic matter is restored, and in some cases this will take a long time.

Again, much of our otherwise good alfalfa soil needs inoculation. It seems to me that we should get this matter of inoculation definitely settled. Last winter we saw an article in a local paper in a neighboring state, written by a man who thought he had exploded the theory of inoculation. He had limed a certain field, inoculated a part of it, and sown it to alfalfa. The alfalfa grew nicely all over the field where the lime had been spread, alike on the inoculated and uninoculated areas. He also sowed a small piece of

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DETROIT JUNE 12, 1915.

CURRENT COMMENT.

The season for road bees is again at hand. In a recent proclamation Gov. Ferner Ferris asked the people of the state to set apart Thursday and Friday, June 10-11, as road bee days. Unfortunately, this proclamation was not received in time to be published in our last issue, but as all highway officers undoubtedly received notice, it is probable that the great majority of farmers as well as other citizens have been asked through the proper channels for volunteer work upon the roads for their respective communities.

Last year the first general road bee day to be observed in Michigan was designated by the governor early in June. Unfortunately, the weather was not favorable over a large section of the state on the designated dates but other dates were designated by road associations and other interested citizens and a large amount of work was done for the betterment of the common earth roads in many sections of the state.

Unfortunately this season's farm work has been delayed by the cold and backward spring weather and it is probable that a great many farmers have found it difficult to contribute on the designated dates. It has, however, been proven that when public spirit is once aroused along any definite line of public improvement the helpful habit is generally easily acquired and public aid will not be limited to a single appointed effort. The road bee days last year were a far greater success than most people anticipated, and the beneficial effects have been noticeable throughout the year. We have in mind one typical rural community in which a main road leading into a little country town was improved by donated labor last year. Already this spring a connecting road through the town has been permanently improved by a public bee. This is but typical of the many similar examples which might be cited in various sections of the state. The benefit derived from public efforts of this kind is manifestly not confined to the single effort. We anticipate that the beneficial effects of road bees will be more pronounced in Michigan this year than last.

The interest which is being taken by the farmers of Michigan in road improvement is surprising. In 1901 the total of highway taxes levied in Michigan was less than \$2,500,000 while in 1914 the total of highway taxes had increased to nearly \$7,000,000, not taking into account bond issues and private donations which would increase this total very materially. It is estimated that two-thirds of this money was raised by direct

vote of farmers of the state at the annual township meetings and was expended on local highways under township supervision. The rural sentiment for improved highways could be better illustrated in no other way than by reference to these significant figures.

The Foreign Situation.

The people and the press of the United States are to be congratulated for their sanity as shown in their attitude regarding our policy toward the nations engaged in the great European war. They have, almost as one man, upheld the hands of the administration in the carrying out of a specific foreign policy. It is true that organized efforts aimed at the final establishment of world peace and other organized efforts whose objective is the promotion of sentiment for the increase of the military strength of our nation have been unusually active during this period, but the people, whose sentiment is the controlling factor in our form of government, and the press, whose importance as a moulder of public sentiment is often underestimated, have adhered to the safe and sane policy of supporting the government. One of the last acts of our Michigan legislature which recently adjourned was to pass resolutions of confidence and support and forward same to President Wilson. Their action was undoubtedly representative of the sentiment of the great mass of Michigan's thinking citizens.

This attitude should be calmly continued during the critical period of diplomatic differences between our government and the government of one of the warring nations. Undoubtedly the best interests of this nation will be conserved by the continued loyal support of the government, whatever foreign policy the exigencies of the case may compel the president and his cabinet to consider or adopt.

With the approach of the fair season and the State Fair which will this year be held September 6-15 inclusive, interest in subjects pertaining to this event will be more marked. One feature of the State Fair which has caused considerable favorable comment and regarding which fair patrons have frequently asked information is the boys' State Fair school which is under the directorship of Prof. Thomas M. Sattler, of Jackson Co. This school was organized in the summer of 1911 with the idea of giving one boy from each county a free trip to the fair and an opportunity to participate in the educational advantages of the State Fair school. This boy was chosen to represent his county by a committee consisting of the county commissioner of schools, the president of the Farmers' Institute Society, and the master of the State Grange. The boys remain at the school for four days each year. The cost of the entire school, including entertainment and instruction, has been borne by the fair and costs about \$1,600 a year. Interest in this work has been so pronounced that some counties have sought the privilege of sending a second boy at their own expense, which requests so far as possible have been granted.

The boys are housed in tents on the fair grounds, divided into squads for drill, exercise and work, each squad being placed in charge of a young man secured by the superintendent through the Y. M. C. A. These young men are in charge of the boys night and day at their campfire, at their work and at their play.

Aside from the educational value of the trip itself, the work in stock judging, etc., which is conducted on the grounds, many of the boys are given prizes by the people or some organization of their own county. This is a worthy educational enterprise which will have an influence in main-

taining the interest of Michigan's boys in agriculture and the farm.

Merited Recognition.

At the annual meeting of the Holstein-Friesian Association of America, which was held last week in Syracuse, N. Y., Hon. D. D. Aitken, of Flint, Mich., was re-elected president of the association. This in itself is merited recognition of the progressive breeders of the state. This recognition is more pronounced, however, in the selection of Detroit as the meeting place of the convention in 1916.

The rapid development in our state of the industry represented by this association is a matter for congratulation to the state at large as well as the progressive farmers who are patrons of this useful breed of cattle. It is, however, but an illustration of the value of united effort on the part of any group of farmers who are applying progressive intelligence to the development of the specialty in which they are engaged.

May we not hope to see this example emulated by other groups of Michigan farmers engaged in other lines of special production. Organization, coupled with progressive energy and intelligence on the part of individual operators will ever bring the degree of success which merits general as well as local recognition.

"Advertising and Truth"

ON June 20-24 the affiliated advertising clubs of the world, representing some ten thousand active business men will assemble in Chicago for a four-day conference for the study and discussion of the various phases of advertising. Few of us who have never given special consideration to this subject realize the potent influence of advertising on every

activity of mankind under present day conditions. No matter whether the reader is one of the class who never answer advertisements or one of the many who look over the advertising columns of publications which they take even more carefully than the reading columns, every reader who studies this question carefully is bound to acknowledge the influence of advertising as an educational and enlightening force. It is through the medium of advertisements that we learn of new developments in the commercial world, or perhaps the best source from which to satisfy old needs, and more and more as years go by are we able to depend on this information as both accurate and dependable.

The age of the fake advertiser is past; reputable publications do not open their advertising columns to clever sharpers with "get-rich-quick" schemes. Publications having the welfare of their readers at heart will not accept advertising of a questionable nature. "Truth in Advertising" has become their slogan as well as that of everyone of this advertising fraternity who will take part in the big convention at Chicago, at which addresses will be made by President Wilson, Secretary Bryan and other prominent men and educators. The work of the convention will include comprehensive discussions of various forms of advertising all tending toward the one fundamental purpose of truth as applied to the advertising business.

The Michigan Farmer has ever stood for clean and truthful advertising, and is happy to announce this great meeting of advertisers who will place special emphasis on the discussion of this essential feature of good advertising business.

SUCCESS VERSUS FAILURE WITH ALFALFA.

(Continued from front page). chances upon the ground being supplied with the proper bacteria. Inoculate, for it will cost but a few cents and may mean success instead of failure. Success with your first venture may be even more important than you know. To fail at first, then get discouraged and wait for years before making a second trial is to lose much valuable time. But success with the first trial will give the courage that will result in the seeding of an area sufficiently large to furnish hay enough for the entire herd throughout the whole of the season when the cows must be fed in the stable.

Oceana Co. W. F. TAYLOR.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The Tonic Allies appear to have enjoyed important victories in the great European conflict the past week. These victories resulted in the recapture of Permyl in Galicia which came into control of the Russians last March after a long siege, and permitted the Slavs to make a drive through the passes of the Carpathian mountains into Hungary. The Austro-German armies have recently forced the Russians to evacuate Hungary, give up Permyl and there is now a probability that Lemberg may also fall; although the Russians seem to be re-organizing their forces and are opposing the advancing columns with great stubbornness. In fact, the center of the line before Lemberg was firmly held up to Sunday. No important changes are reported in the eastern line north of Warsaw. The severe fighting in the western front between Arras and the Belgian coast continues. The Germans have been using every means of forcing the Allied troops back at this point to gain a base on the south bank of the English Channel but the efforts thus far have been futile and important points were lost by the Germans last week. The French now hold two-thirds of the "Labyrinth" and have made gains at either side. Souchez and a large part of Neuville St. Voost are also occupied by French forces after violent fighting. Three miles of trenches were captured and held by the land forces of the Allies along the Dardanelles. During the past week German submarines sank several small craft in English waters. German and Russian battleships were reported to have clashed near Riga, but details are not known here.

Nothing definite has resulted from the note sent to the different leaders in the Mexican warfare by President Wilson, but a tentative effort is reported to have gotten under way looking toward the opening of negotiations between General Carranza and the Villa-Zapata faction. Because of the suffering of the common people in Mexico the note of the President declares that unless these leaders can get together means of establishing a stable government will be undertaken by the United States.

A boat load of provisions has been sent from Galveston, Texas, to Vera Cruz for the relief of starving people in Mexico City. Arrangements have been made to insure the safe passage of the supplies through Carranza's lines.

National.

Early this week the United States government answered German's reply to the first note of President Wilson relating to the Lusitania disaster and the submarining of American boats. In this last note the President refuses to parley with Germany over details until a straight answer is made to the demands of the United States regarding humanitarian questions involved in the conduct of the submarine warfare. The note will probably be transmitted to Germany on Tuesday.

Chicago contractors have agreed to arbitrate wage differences with the carpenters of the city and there is now hope that the strike which has resulted in a large economic loss to the laborers and contractors will be ended. When the 23,000 carpenters left their tools more than a month ago 100,000 allied workers were thrown out of employment.

An investigation is under way by the Federal government looking into the conduct of midshipmen at the Annapolis naval academy where irregularities in the conduct of examinations are charged.

One of the worst electrical storms in the history of Flint visited that city Sunday night, crippling street car, telephone and telegraph service and flooding many cellars.



New Bacteria Discovered

It has been stated on good authority that Prof. W. B. Bottomley, of King's College, London, England, claims to have discovered a "new bug," or a formerly unknown specimen of bacteria that will help farmers to grow larger and better crops. He claims that his new discovery is a bacteria that exists in peat and is very active and efficient in gathering nitrogen from the air.

Peat is but partially decayed vegetable substances which accumulate on low, marshy ground. It is pressed, dried and used as fuel. It is not very different from swamp muck.

The professor speaks of his "new discovery" in glowing terms. He says: "It is a bug that does it all. Our first difficulty was to find him and then to nurture him. There is no telling where it will all end. It may revolutionize agriculture, who knows? In recent years evidence has been accumulating and we now know that the organic matter of the soil, with its myriads of bacteria inhabitants, is the most essential factor in soil fertility. The decay of organic matter produces humus. This material furnishes food and energy for numerous soil bacteria, and is gradually converted by them into other substances, and they also render the mineral food constituents of the soil available for plants. Thus a new humus theory of soil fertility is gradually evolving as the result of modern research."

The professor relates an instance when he set tomatoes in what he believed to be barren sand, watered with water containing the newly discovered bacteria and secured a remarkable growth. To him it seems to be positive proof of great merits in the "new bug," as he calls it. This bacteria is said to be a nitrogen gatherer. It may be such, but to us who have been studying the needs of plants, we have been led to believe that there are ten essential elements of plant food: Carbon, oxygen, hydrogen, nitrogen, calcium, potash, phosphoric acid, magnesia, sulphur and iron, nine besides nitrogen.

In practical operations on the farm we have found, by experience and experiment, as well as theory, that swamp muck has a considerable value as far as fertility goes, if it is properly handled. If thrown out on a dry sandy knoll, and left on the surface, no good seems to come from it. But if muck is composted with warm manure, like horse or sheep manure, spread on the surface and worked into heavy soils, great results can be obtained. I have secured great results in stimulating green crops in that manner, and it aids greatly in securing a catch of clover the following season. The physical condition of hard clay knolls has been greatly improved by the use of such a mixture of manures.

We know that swamp muck is made up of decaying vegetable matter. I have always assigned the benefits derived from it to the nitrogen which it contains. Chemists tell us that swamp muck contains about four per cent nitrogen. We have been told that commercial fertilizer manufacturers dry the swamp muck and use it as a filler in their fertilizers and charge up the nitrogen which it contains, though the plant food which it contains becomes available slowly, used separately from the barnyard manure. Fertilizers thus filled work better if used in conjunction with stable manures.

If Prof. Bottomley has captured a "new bug" that can be transferred from peaty ground to high lands, and will do good service on our light, sandy soils in promoting the growth of valuable plants, we ought to welcome it, and learn how to propagate and nourish it. Such a "bug" would be a boon to the millions who may be dependent on such a soil for a liveli-

hood. We ought to all welcome it, for it might be an agency through which we can clothe our desert places with choice vegetation, and make them blossom with more than Eden gladness, and yield abundantly of the rich fruits that will meet the needs of our rapidly increasing population.

Wayne Co. N. A. CLAPP.

HOW TO MAKE A POTATO SPROUTER.

Take an apple barrel down and rebuild it by nailing the staves to the hoops, leaving a space of about an inch between the staves, a little more space is better than less. This forms a slatted drum with open ends, which is to be the sprouter. To hang this drum, make two crosses out of pieces of board about two and a half inches in width and long enough to reach across the drum in the form of four spokes to a wheel. These are secured inside the drum about four inches inside each end. Then run a shaft, wood or iron, through the center of the crosses, or spokes, and secure it to them so that when the shaft is turned the drum revolves. A crank on one end of the shaft is used to turn the drum when at work. Next make a frame in which to work the device, as follows:

The upper end, where the potatoes are turned, or fed in, should be about 24 inches wide by 28 inches high, with a box in the center of the top piece to take the upper end of the shaft. Another frame is made 24 inches square with a box to receive the lower end of the shaft. These two frames are then secured in position by a board on either side and the drum is placed in between them, with the two ends of the shaft in the boxes and will rest in a horizontal position. Boards are nailed to the frame at the upper end of the drum and close enough so that the potatoes cannot fall out, and at the lower end a board is secured in a position to close the upper portion of the drum so the potatoes cannot be thrown out above as the drum is revolved.

Then make a hopper at the upper end with which to feed in the potatoes, put a crank on the shaft and the machine is done.

It will be seen that the drum is in a horizontal position with one end about three or four inches lower than the other end. The potatoes are turned in at the open or upper portion of the drum. By revolving the drum they are rolled over and over, in which operation the sprouts are broken off and fall through the spaces between the staves and the potatoes, roll out at the lower or open portion of the drum into a basket.

There are times when it is necessary to put them twice through but usually, with smaller sprouts once through does the work nicely and two men can sprout from 30 to 40 bushels per hour if everything is handy.

Allegan Co. H. H. HUTCHINS.

NEW USES FOR OLD LEGUMES.

I have been carefully watching the development of sweet clover on deep muck soil. The seed has followed cow paths and ditch banks down from the uplands and is growing profusely. The color is dark green and it exhibits none of the characteristics of alfalfa trying to grow on acid soils.

I would have been more surprised, but well remember the nuisance sweet clover was in the western irrigation ditches where it would grow six or eight feet high and in density looked like willow clumps. There were laws proposed against allowing sweet clover to go to seed for the trouble it made in clogging the flow of irrigation water. So from western experience it

would seem that sweet clover is not afraid of wet feet and can grow on drained muck soil in the east.

How far is it acid tolerant and have we got to change our ideas about the bacteria of sweet clover and alfalfa being the same or that one plant with the same, or practically the same chemical composition can thrive where another similar one fails? "One swallow does not make a summer," nor does one example of swamp growing sweet clover of necessity determine that this newly adapted plant will be the redemption of Michigan's muck soils, but it certainly points in that direction.

As it is not too late for some time to sow sweet clover, the writer would suggest that those who are interested give sweet clover a tryout on swamp lands, especially those swamps which are reasonably dry and not waterlogged so as to prevent germination.

Every legume added to the soils in this state is a distinct agricultural gain from a food standpoint and also from that of soil fertility. The list of added legumes, speaking in rather general terms, in point of time has, within the last two decades, been greatly augmented. Alfalfa, sweet clover, vetch and soy beans are the newcomers demanding our attention and challenging our admiration. The finest piece of alfalfa I know of is growing on a stiff clay soil and is behaving altogether differently than laid down in the books. A patch of vetch has spread for several years and is sapping the life out of some Canada thistles, which are yielding to this legume, which my Russian help call "Ligens." These men tell what wonderful feed it makes for cows and horses in the land of the Czar.

The soy bean promises to add largely to the meat-making proposition when fed to sheep and swine, and when the fact is known that it is harvested by live stock the expense of handling is practically nothing, it seems most promising.

There are many farm flocks of lambs put on the market in the fall of indifferent flesh and not highly esteemed by the packers, which would be finished to advantage on a few acres of soy beans. This is also true of spring pigs whose frames are not filled out well, where no corn is at hand. In fact, soy beans seem to be, not the missing link but the connecting link between the corn crib and the season's crop of corn.

Shiawassee Co. J. N. McBRIDE.

FARM NOTES.

Blue Grass in Alfalfa.

I have a field of alfalfa containing about ten acres. Blue grass has started in some places and appears to be taking the place of the alfalfa. How can I treat this field to destroy the blue grass and not destroy the alfalfa? How and when shall I proceed?

Berrien Co. W. W. N.

Michigan experience is as yet too limited in the growing of alfalfa to permit of any positive assertions as to whether a successful stand may be maintained without serious encroachment from blue grass for many years, as has been done in other states. Much will depend, in the writer's opinion, upon the hardness of the alfalfa. When strains have been acclimated or developed which will successfully withstand our climate so that old seedlings do not become constantly thinner from year to year, we believe that it can be done.

The first essential is unquestionably the supplying of soil conditions which will be favorable for the alfalfa plant. No less an authority than Joseph E. Wing, of Ohio, asserts that if the soil is supplied with plenty of lime and phosphorus to meet the needs of the alfalfa plant, June grass will not run it out. Other authorities advocate the disking of alfalfa in the spring, or better yet, working it with tools especially adapted to the purpose which will

discourage the June grass and encourage the alfalfa. Experience has demonstrated, however, that where reasonably favorable conditions are supplied, a profitable stand of alfalfa may be maintained for ten or more years without any cultivation, and it is questionable whether under Michigan conditions it will not be more profitable to break up the old fields, use them in the regular crop rotation and again re-seed after the stand has endured for such a length of time.

This is a local problem which must be worked out from experience under our conditions, but from present knowledge it would seem doubtful whether any treatment of an old alfalfa seeding in which June grass is encroaching will be more profitable than a liberal feeding of the alfalfa by an application of phosphoric acid and potash fertilizer.

The writer made an application of 500 pounds per acre of such a fertilizer on one field of alfalfa last year with a notable improvement in the appearance of the stand, and will make a similar application on 40 acres more this season. This fertilizer was sown with a broadcast distributor after the cutting of the first crop. The same method will be used in sowing fertilizer on the alfalfa this season, dependence being placed upon later rains to dissolve the plant food and carry it into the soil.

Millet.

What kind of soil is best for millet, light sandy soil or heavy clay, and would it do well on muck? How much seed should be sown per acre, and when ought it to be sown? Also, when ought it to be cut to make good hay?

Cass Co. F. J. R.

The best soil for millet is a rich, well-drained sandy loam. It does not thrive on heavy clay or wet lands. It requires warm weather for its successful growth, consequently it should be sown after weather condition are suitable, as the very last of May or first of June. When grown for hay, about one half bushel of seed of the common millets is required per acre. It should be cut for hay between the time of complete head and late blossom. It should never be allowed to stand until the seeds begin to ripen, owing to the possible injurious effect it may have on animals eating the hay. This is particularly true with horses, and it is better not to feed millet hay to horses in any quantity, as serious results sometimes follow its use for this purpose.

Concrete Storage Tank.

I want to pipe water into a barn. We have from three to four feet of fall from the windmill to the basement floor. Which, in your opinion, would be better, to build a concrete tank at the mill or to build a storage tank in the barn? Would a concrete tank built into the ground to a depth of four feet and covered with from one to one and a half feet of ground be liable to freeze? How large a tank would you build for 25 to 30 head of stock? Would you consider a 50-bbl. tank large enough for say, two or three days?

Tuscola Co. J. E. S.

The best place to build this tank will depend altogether upon the matter of convenience. It would not be likely to freeze to any extent when built in the ground and covered with earth as suggested. Where more fall is available, we have known very successful storage tanks to be built on well drained soil by simply digging a large cistern in the ground and plastering same with cement, siphoning the water from this storage tank to the barn at a lower level. In this case there has been no trouble from freezing. A 50-barrel tank should supply ample water for two or three days for the amount of stock mentioned.

"Try-a-bag" of fertilizer. Our brands are soluble and active, and not only increase yield, but improve quality and hasten maturity. Agents wanted. Address American Agricultural Chemical Co., Cleveland, Cincinnati, Detroit or Baltimore.—Adv.

This Separator Will "Show You"

You do not have to take our word for it—The Dairy Queen will come to you on 30 days' approval, ready to submit to any test to prove its unusual value as a

Guaranteed separator of large capacity and improved design at a reasonable price.

You test it alongside any other separator and it will prove its superiority in your every requirement.

Simple
Durable
Sanitary
Light running
Enclosed gears
Tinware on opposite side from operator.



The Dairy Queen is a 500 pound, close-skimming separator, fully guaranteed, for \$40. Let us tell you more of its many good points—just ask for our booklet "The Dairy Queen."

Dairy Cream Separator Co.

Makers of Separators for 14 Years
1202 West Washington St. LEBANON, IND.

A Wonderful Feed

NO MIXING NO BOTHER
At last the dairyman can get the feed he has long wanted—a Ready Ration—to be used right out of the sack without any mixing or bother—made of honest ingredients that are just right, without any adulterants, fillers or other rubbish.

Larro-feed

is compounded to produce results—it is made of choice cottonseed meal, dried beet pulp, gluten feed, corn distillers' grains, wheat bran, wheat middlings and a little salt—that's all. Properly blended, thoroughly mixed to produce lots of milk—good milk and keep your cows healthy. Sold on a plan of money back if you are not satisfied. LARRO agents almost everywhere. Write us if none near you. (43)
The Larro-Milling Co., 1943 Gillespie Bldg., Detroit, Mich.

More Durable Than A Block of Granite

Yes, granite crumbles from weathering, but the vitrified hollow clay tile of the Natco Imperishable Silo will last forever. This silo will be handed down as the property of generations.

Natco Imperishable Silo

"The Silo That Lasts for Generations"

is reinforced by bands of steel laid in the mortar. No painting, repairs or adjustments. The moisture, air and frost-proof walls preserve ensilage perfectly. Write to nearest branch for list of Natco owners in your State and for catalog A National Fire Proofing Company

Organized 1889
Pittsburgh, Pa.

Madison, Wis. Lansing, Mich.
Syracuse, N.Y. Philadelphia, Pa.
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FILL SILOS QUICK

Three sizes, 6 to 18 ft. P., direct drive to main cutterhead shaft, 2 1/2 in. in diameter, powerful 6-blade fan on same shaft. Emery wheel attached.
Sold on trial

FREE FARMERS ACCOUNT BOOK



Get All The Cream

Cleveland Cream Separators get all the cream. They are guaranteed. They run easier. They last longer. Fewest parts to clean. They cost less because they get all the cream. Agents wanted.

The Cleveland Cream Separator Co.,
1017 Power Ave., Cleveland, Ohio

Dairy.

CONDUCTED BY COLON C. LILLIE.

LILLIE FARMSTEAD DAIRY NOTES.

The Borden people, probably the largest purchasers of market milk in the United States, have just adopted a principle in the purchase of this season's milk which will have a far-reaching effect. The new principle is to pay for milk according to its quality. This should always be done. It is the only just way. The consumer is as much entitled to know the quality of the milk he purchases as the quality of any other food products. Yet, strange to say, the price of a quart of milk has always been the same, regardless of whether it contained three per cent or five per cent of fat. But lately consumers have awakened to the fact that they get more for their money in five per cent than in three per cent milk. It is not alone in the butter-fat but in the other food solids in milk as well, that is five per cent milk contains more casein than three per cent milk. It has more food value and ought to command a higher price. One hundred pounds of five per cent milk will not only make more butter than 100 lbs. of three per cent milk, but it will make more cheese. As the fellow said, "it contains more to eat."

The Borden people start with a certain price for three per cent milk, depending on the market, and then add three cents for every 0.1 per cent in-

crease in fat. For instance, if three per cent milk is worth \$1.20 per 100 lbs., then 3.1 per cent milk would be worth \$1.23. This makes a difference of 60 cents per 100 lbs. between three and five per cent milk.

We opened the gate and let the cows into the pasture May 13. It had got a fairly good start and was of unusually good quality at this time of year, because the weather has been dry and the grain is not so sappy or watery as it usually is when we have had more rain in the spring. Usually spring comes with a warm rain but this year it came with hot days and no rain. The grass grew just the same. It is warmth the grass needs in early spring, not moisture. There is plenty of moisture in the ground early in the spring. A warm rain warms the ground but so does 94 degrees of temperature. The method is different but the result is the same.

While the cows have been turned on the pasture we still feed them ensilage and a light feed of grain mornings before they go out. They also have hay in the mangers that they can eat if they choose. They eat very little hay, however, while the pasture is fresh, still more than one would suppose. I think it is an excellent thing for them to eat some hay so the change of feed will not be so abrupt. Perhaps if one had plenty of good pasture it would not be necessary to feed any grain at all, yet careful experiments show that grain fed even on luxuriant pasture, while at the time

TRAINING THE HEIFER.

There is no excuse for having to "break" a heifer for the dairy. She should be handled from early calfhood in such a manner that she will graduate into milkhood without knowing it.

The calf should be taught to submit to authority, to know what a halter or a rope means, and should never be abused nor frightened. Some cows seem naturally vicious but the majority of kickers have been spoiled in the making by improper handling.

Sometimes a fractious or fidgety cow can be tamed by a steady treatment of poise. Poise, meaning balance, goes with a calm and well governed temper. Some men have it by nature and these are invariably successful with live stock, especially cows and horses. A man of explosive temperament, one who makes false motions and fusses over trifles, cannot hope to succeed with animals until he gets himself well in hand. His lack of self-control is communicated to the beasts in his care, while the man who is slow to anger and big

together prevents accidents during milking. The same result is attained by flexing the cow's fore leg against her body and fastening it there with a rope or strap. She can't stand on two legs and do much kicking. A small rope tied tightly around her body just in front of the udder and back of the hip bones is said to be an effective cure for "steppers."

It is important to train heifers in their youth so that when they mature there will be no necessity to go through a strenuous process. Any animal, old or young, with a persistently evil disposition, might better be sent to the butcher, or sold to whomever wants to bother with her.

It is best not to breed a heifer until she is at least a year old if of the smaller breeds, and 16 months for the larger types. She will make a better record in the long run.

If a heifer about to drop her calf is brought into the stable or barnlot and handled every day for a week or so, she will very likely adjust herself to being milked without difficulty after her calf has been removed, which should be done after it is a day old. The young mother becomes quickly reconciled and transfers her affections to her caretaker, while the calf is thus much easier to wean.

Illinois.

H. A. BEREMAN.

NEWAYGO COW-TESTING ASSOCIATION.

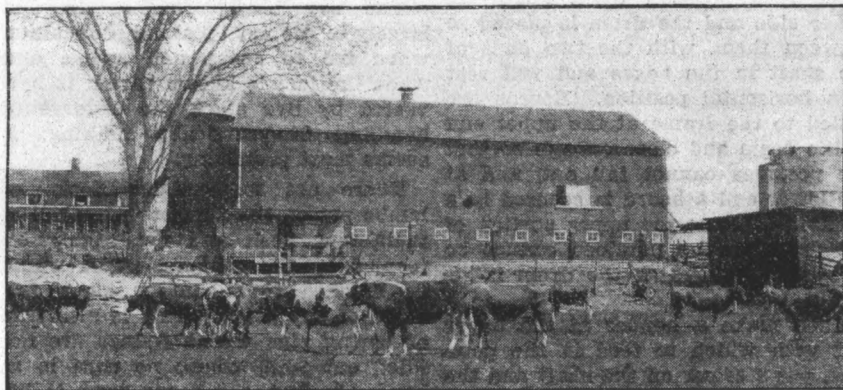
One of the most profitable and enthusiastic meetings ever held by the Newaygo Cow-testing Association was held in the directors' room of the Fremont State Bank on Saturday, May 8. Dr. Eben Mumford, of M. A. C., was present and addressed the members. He emphasized the importance of producing the goods in sufficient quantities as well as the quality, and in order to do this we must get together as communities, whether it be in fruit growing, potato raising, or breeding dairy cattle. Dr. Mumford laid particular stress on advertising what we raise. We must let other people know we have the goods if we would create a market for them. After the reading of the annual report, Mr. H. P. Davis, of the Dairy Division, Washington, D. C., discussed at some length lessons that might be made profitable from the study of the report of the several herds. He advocated the feeding of the cow so as to bring her up to the highest point of efficiency and profitable production. That all cows cannot be fed alike to prove profitable, but the true dairyman must study the individual cow and feed her according to her capacity and ability to produce.

The association voted to hold a picnic in August and a committee was appointed by President Robert Kempf to arrange for a program and exhibits. Mr. George Crawford very kindly invited the association to hold the picnic at his place, which was accepted.

In order to create an added stimulus in the cow-testing work, the matter of giving a trophy for a prize-winning herd or cow was discussed and as a result it was voted to offer a cup, the regulations governing the same were to be left to a committee appointed by the president. To insure the obtaining of the cup, over \$10 were pledged by those present.

The annual report as read by Tester Gilbert Kempf, proved very interesting and is as follows: There were 374 cows started on the test, 214 of them finished, 60 were sold, two died, 11 were bought, 75 were heifers that were started after the beginning, and one herd of 12 cows was tested only the last seven months, making an average of 287. From the 214 cows that completed the year's work, there were 79 that made over 300 pounds of fat, of this 79 there were 31 making over 350 pounds, and of the 314, nine produced over 400 pounds. Two cows made over 450 pounds.

A total of 1,933,922 pounds of milk was produced, or an average of 6,729 pounds per cow. The average butter-



Guernsey Herd Belonging to Henry Rozema, Newaygo County.

enough not to let a dumb brute provoke him to wrath, will have animals around him that are placid and profitable.

I emphasize this matter, for the habit of poise is a paying asset in the dairy barn. It is a well-known fact that cows give more and richer milk when they are quiet and contented. Few men realize what it costs in dollars and cents to drive up cows from the pasture with a whoop and hurrah, or to have them excited at milking time. Loud and harsh words are almost as bad as using a boot to make them "so there."

The writer once bought a grade Shorthorn cow for his dairy farm. She arrived at the end of two ropes in charge of a couple of rough drovers, her eyes bulging out with fear and rage, and for several days she was a holy terror to milk. The hired men gave her up in disgust but I felt convinced that the right treatment would sober her, and I took her in hand myself. At first I had to milk standing away as far as I could stretch, with a tin cup in one hand and milking her with the other. After a week or more of firm but gentle treatment she would let me sit on a stool with a pail between my knees and milk her like a Christian. She never became real friendly, however, but her stable manners were good and she made one of my best milkers.

A kicker may be cured by patience and gentleness, but a few devices sometimes help. Tying the hind legs

fat test was 4.06 per cent. The total amount of fat produced was 78,513 pounds, an average of 273.2 pounds per animal. The average price of the fat was 31.7 cents, making a total value of \$24,866.73, an average income per cow of \$86.52. The roughage cost \$10,003.54 or each animal consumed \$34.81 worth. Grain cost totaled \$5,039.40, or per cow, \$17.53. The total cost of feed is \$15,042.94, or an average cost per cow of \$52.34, leaving a profit for the association members of \$9,823.78, or an individual profit per cow of \$34.18. The returns for \$1.00 invested in feed were \$1.65. The feed cost per pound of fat was 19.2 cents and feed cost per hundred weight of milk was 78 cents.

Association Standing is High.

These records bring the Newaygo Cow-testing Association to third place in the file of testing associations throughout the country.

The highest producing cow was a grade Holstein owned by Charles Miller. This cow gave 11,499 pounds of milk testing 4.2 per cent butter-fat and made 473.8 pounds of butter-fat. The average price for butter-fat was 31.7 cents, making a total of \$151.34. This cow was pastured five months and with rest of roughage eaten made a cost for roughage of \$37.22. Her grain ration cost was \$26.76, or a total cost of \$63.98, leaving a profit of \$87.36. Returns for one dollar expended were \$2.36. Food cost of one pound of butter-fat, 14 cents, and feed cost of one hundred pounds of milk, 56 cents. Mr. Miller's herd averaged the best for butter-fat of any in the association and only two of the eight were mature cows. A four-year-old, a half sister to the cow holding the highest record, gave 9,563 pounds of milk and 382 pounds of fat and a two and a half year old heifer, daughter of the first mentioned cow, gave 351 pounds of butter-fat, all going to prove that milking qualities are transmitted to offspring.

Good Records.

The highest producer of butter-fat was Bonnie's Rosebud of Sitka, a registered Guernsey owned by Mr. George Crawford, of Holton. This cow gave 10,034 pounds of milk, and 461.9 pounds of butter-fat. This same cow made 486 pounds in an advanced registry test. The herd belonging to M. B. Stevens had the best average for milk production, 10,314 pounds average per cow.

Rose, a grade Holstein, owned by Charles Miller, gave the most milk by producing 12,514 pounds. The cost of this milk was 51 cents per hundred weight. The herd of Harry Rozema made the most profit. One cow, Queen, a grade Jersey, had an average test of 6.4 per cent and with 5,005 pounds of milk produced 324.4 pounds of fat. Fourteen cows produced less than 175 pounds of fat each, five of these were mature, the rest heifers.

At the close of the meeting the association showed its appreciation of Mr. Kempf as tester, by giving him a rising vote of thanks.

Newaygo Co. K. K. VINING.

CENTRAL MICHIGAN HOLSTEIN SHOW.

On Wednesday and Thursday, May 26-27, members of the Central Michigan Holstein Breeders' Association brought together one of the greatest Holstein shows ever staged. The city of Lansing, the Lansing Chamber of Commerce and the members of the association, working together, held a show on the City Market that was a revelation to the breeders themselves. One hundred and seventy-three animals were assembled and there was not an inferior one in the lot.

Mr. Frank R. Crandall, of Livingston county, the well-known breeder and judge of Holsteins, was selected to place the ribbons and when he stepped into the ring to begin his work Mr. Crandall found 41 Dutch matrons in the aged class. Mr. Cran-

dall spoke briefly to the crowd surrounding the ring, saying that Livingston county breeders had assembled 34 head in the aged cow class at their county fair last fall, that he had seen 30 cows in the aged class at the National Dairy Show, but that this was the greatest show he had ever seen.

So far as is known to the writer, this is the first local spring show ever held in this county, and though it is a well known fact that many famous animals of the breed have been bred or developed, or both, in the territory covered by this association, even the best informed breeders were astonished at the number of animals brought out and the quality shown.

As an indication of the uniform excellence of the cattle shown it is only necessary to note that the prizes were distributed very evenly among the 19 breeders. No one exhibitor received more than five ribbons outside the championships.

Show an Annual Event.

It is planned to make this show an annual event since the first one was such a signal success and it will undoubtedly be a means of raising the present high standard of excellence of the Holsteins of the vicinity as there was keen interest shown by the breeders in the reasons given by Mr. Crandall for his placing.

Judging of the various classes was completed Thursday, the list of awards being as follows:

Full age cows—First, G. H. Gillespie & Son, Mason; 2nd, Edward Stoll; 3rd, M. A. C.; 4th and 5th, Gillespie. Young cows (above three years)—First, G. H. Gillespie; 2nd, Edw. Stoll; 3rd, Espanore Farm; 4th, B. F. Frye; 5th, Edw. Stoll.

Two-year-old calf—First, C. Schaibly; 2nd, A. B. Niles; 3rd, M. A. C.; 4th, B. F. Frye; 5th, Hull Bros., Diamondale.

Yearlings—First, Wm. Stoll; 2nd, A. B. Niles; 3rd and 4th, M. A. C.; 5th, C. L. Hulett & Son.

Senior heifer calf—First, H. D. Box; 2nd, M. A. C.; 3rd, C. W. Wilson; 4th, C. L. Hulett & Son; 5th, C. W. Wilson.

Junior heifer calf—First, Espanore Farm; 2nd, A. B. Niles; 3rd, Fred Shubel; 4th, C. L. Hulett & Son; 5th, M. A. C.

Aged bull—First, Neller & Wooley; 2nd, M. H. Daniels & Son; 3rd, G. F. Balduf & Son.

Two-year-old bull—First, C. L. Hulett & Son; 2nd, H. F. Box & Son.

Yearling bull—Fred Shubel.

Senior bull calf—First, C. W. Wilson; 2nd, Hull Bros.; 3rd, F. W. McKim & Son; 4th, C. L. Hulett & Son.

Junior bull calf—First, John D. Somerville; 2nd, F. W. McKim & Son; 3rd, A. B. Niles; 4th, Edw. Stoll; 5th, Dr. W. W. Thorburn & Son.

Senior champion female—G. H. Gillespie & Son.

Junior champion female—Wm. Stoll.

Grand champion female—G. H. Gillespie & Son.

Senior champion male—Neller & Wooley.

Junior champion male—C. W. Wilson.

Grand champion male—C. W. Wilson.

Produce cow—First, M. A. C.; 2nd, Wm. Stoll; 3rd, Gillespie & Son; 4th, Espanore Farm.

Get of sire—First, Edw. Stoll; 2nd, Espanore Farm.

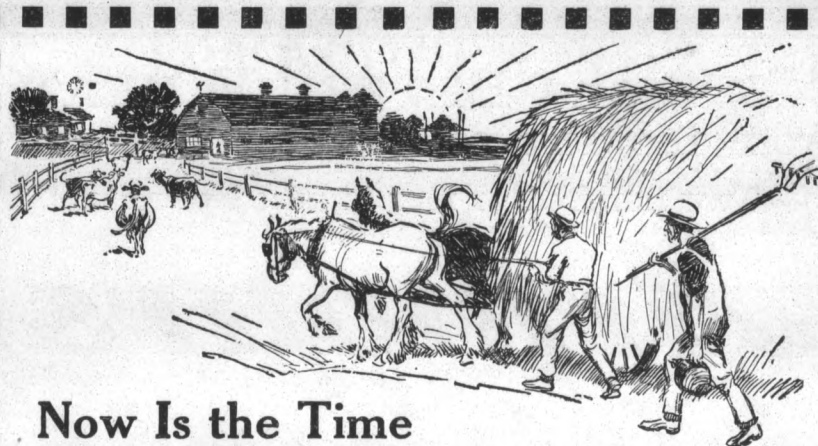
L. M. HATCH.

GOOD PRICES AT HOLSTEIN SALE.

At the Fourth Annual West Michigan Holstein Breeders' consignment sale which was held in Grand Rapids May 4, 82 animals were sold for \$14,804, which makes an average price of \$180.53. This is a very good average when the fact that several bull calves were sold at low prices is taken into consideration.

The prices received at this sale would indicate that it does not pay a breeder to consign bull calves unless they are from high record A. R. O. dams and from sires of exceptional good breeding.

The animal bringing the highest price was the male Johanna McKinley Segis 3rd, which came from the herd of John Tobin, of Allegan county, and was sold to Benjamin J. Hanchett, of Kent county, for \$1,050. Mr. Tobin consigned nine animals and received an average price per head of \$275.55. The highest priced female was K. S. P. H. Houwtji Maid, which came from the herd of Buth Bros., of Kent county, and was sold to Elias Bennett, of Newaygo county. F. C. Rasmussen, of Montcalm county, consigned 16 head which was the largest number.



Now Is the Time When Hand-Milking Is An Extremely Costly Proposition

DURING haying time, when everybody is up to his ears in work, and when every hour that the hands are taken off the job to milk a string of smelly cows means an actual loss of good money, the dairy farmer is up against a pretty tough proposition.

For cows and hay wait for no man. Hay must be cut, cows must be milked. The farmer can't afford to neglect either.

That's the time when a blessing in disguise is the

SHARPLES MILKER

Knowing that the milker is on the job, the hands go at the milking in the morning and evening with none of the old-time ill-humor that they were more or less justified in displaying when hand-milking was necessary.

They get right down to business and make short shift of milking. The pump is started, the teat cups adjusted, the cows relieved of their milk quickly, gently, with beneficial results. No old-fashioned, hand-milker rough treatment, jerking of teats, gouging finger nails, half-hearted milking, half-milked cows. Simply a steady flow of absolutely clean milk into airtight buckets, one man and a Milker doing more and better work than three good hand-milkers formerly did.

Then there is Sunday and holiday freedom; contented hands; purer, higher priced milk; regular sleeping hours; and—quite frequently—an increased production.

Milking never should seriously interfere with the regular work of the men—and it won't, once you realize the big possibilities of the Sharples Milker. You already know the Sharples Milker pretty well. You've read about it, discussed it with your neighbors, perhaps have seen one in operation. You know of the big, sound company behind it, with a reputation of making only the absolute best. You therefore realize you do not take the slightest risk when you invest your money in a Sharples Milker.

A Complete Sharples Milker

—two unit one-man outfit, capable of milking 20 cows an hour—

Costs \$288

installed in your dairy barn. This outfit includes a simplified single cylinder pump, vacuum and pressure tank, valves, gauges, stall fixtures, and necessary piping. Also two regular Sharples milking units complete with pulsators, teat cups, rubber tubing inflation, and German silver buckets. Installation work and instructions for operating the Milker also are included. \$288 covers everything.

With this outfit, one man can easily milk 20 cows in an hour, allowing sufficient time for cleaning the Milker. In dairies of 10 or more cows this outfit will pay for itself inside of a year. Extra units at the standard price may be had at any time.

Full particulars on request

Made by the same company that makes the
SHARPLES TUBULAR CREAM SEPARATOR
—the world's standard for a third of a century.

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MORE and BETTER WHEAT
from the acre at less cost to grow.

—Two hundred to four hundred pounds of

Armour's Fertilizers

drilled in at seeding time will promote rapid root-growth, insure early maturity, heavy grain and more of it; reduced bushel cost; a good clover catch and a more profitable grain crop—

IT'S THE YEAR the world needs the grain.

Write for "More Money From Wheat."

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Pays for itself in a short time from the profits. Solid steel construction—certain sure operation. Makes its own power from simple, sturdy Sandwich gas engine (4, 6 or 8 H. P.) on same truck.

Fast Working—Money Making

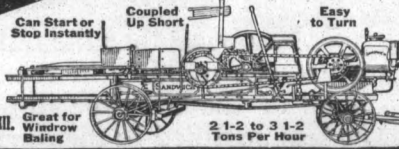
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SANDWICH

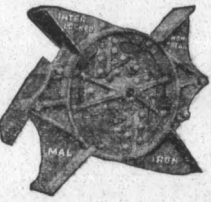
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Capacity Economy Safety New Different

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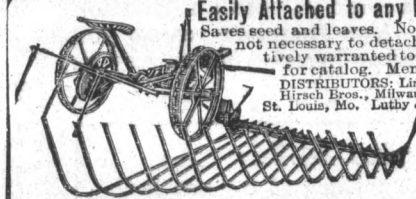
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Thornburgh BUNCHER AND WINDROWER

Make more money on your clover, alfalfa, timothy, peas, flax, vetch, soy beans—all short grain crops, by using the Thornburgh Side-Delivery Buncher and Windrower. Save waste of time, seed, fodder. Chalmers, Oregon, writes: "Best assistance I've had in 15 years. Cuts a third more acres in half the time, cuts clean, puts hay in shape for quicker loading, turns it out of horses way, no waste of seed."



Easily Attached to any Mower Heads and leaves in center, stems out to dry quick. Saves seed and leaves. No raking or tedding. Buncher can be folded for moving, not necessary to detach. Thornburgh Bunchers used in every state. Positively warranted to work right. Costs little—pays for itself every day. Write for catalog. Mention dealer's name. Write nearest distributor or to us.
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\$4 TO \$8 MORE PROFIT PER ACRE

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Cuts the silage in uniform lengths, which insures the Best of Feed. Silage packs closer, which permits of more tonnage into the silo. For strength, durability, capacity and easy-to-feed—Ross Machines are unexcelled. Write for catalog.

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FREEMAN Dollar-Saving, Powerful Ensilage Cutters

embody more labor-saving and money-making features than any others made. There is no clogging or wasting with the Freeman positive, steel, enclosed carriers (Patented). We have made this machinery for 47 years and we have improved it every year. Simplicity and strength personified, 100% efficiency.

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FREE BOOK—We will send you a free book that explains and pictures the complete Freeman line of cutters for every purpose from hand-power up. A postal will bring your copy of this book.



Liberal Feeding

THE wise farmer works with nature. In one sense he improves on nature and to this extent his methods are artificial. Nature is satisfied to keep alive a vast number of animal species. The farmer must do more than keep his live stock on their legs—he must make them profitable. This idea of profit—the economical aspect of husbandry—is altogether man-made, hence artificial; yet even here the wise farmer works with nature. In nature the struggle for existence is fierce and constant. Wild animals are nearly always hungry and having to forage for a livelihood makes them tough and sinewy. Man protects his domesticated herds from their enemies and provides them with food. All they have to do is to eat and grow. The more they eat, the more they grow, up to a certain point. Judging by the prevalence of scrub and indifferent stock found on American farms, it is evident that most of our farmers do not feed liberally enough to force their horses, cattle, sheep and hogs to large and rapid growth. This is a serious indictment of our intelligence and good sense. What colossal foolishness to raise animals in the hope of profit, and feed them with a grudging hand! It is true that such animals will keep alive and even continue to grow, but to make them grow fast they must be fed with liberality.

In all branches of live stock farming breed weighs heavily, but feed counts for fully as much. To raise a profitable dairy cow, one that will give 8,000 pounds of milk a year, it is necessary to start with a good foundation of ancestry and feed the calf from infancy up with an almost lavish hand. The youngster must be kept growing. It must never know what hunger means. It should have plenty of exercise so it will come up to the rack every day with a good appetite. A pinching policy at the feed trough means scrubs later on, no matter how long a pedigree an animal may possess. One reason why we still go to France for our Percheron horses is that American breeders do not feed as judiciously as do the shrewd and skillful peasants of La Perche.

It is easy to over-feed, but from the appearance of barnyards throughout this country it seems easier for the majority of farmers to give too little than too much. A well-bred colt of a draft type will eat an amazing lot of grain, hay and grass during his first year. When he can be made to mature into a \$500 or even a \$300 animal it is folly to stint him at meal time.

Making baby beef—meaning a thousand-pound steer at twelve months—is no more nor less than a stuffing process. Starting with good stock the feeder will get his yearling beef by keeping that calf eating and growing from the day of its birth. It must be fed so plentifully—yet judiciously, as "the eye of the master fattens his cattle"—that it never loses its "calf fat."

The same principle works with hogs, sheep and poultry. If they are fed all they will readily clean up, they will make more gain for the amount of feed consumed than if they are handled with that extreme sense of economy that is "penny wise and dollar foolish."

The point is that a large part of an animal's food is used for bodily maintenance. The surplus over this is used for growth, or in the case of the dairy cow, in the production of milk.

Absolute rules for quantities of feed are worthless. The feeder must understand principles and make his own rules as he goes along. He must make them to fit his particular circumstances. The only general rule worth remembering is that an animal should be given all it will eat and still keep in condition. This can only be determined by experiment.

Illinois.

H. A. BEREMAN.

EXPERIMENTS IN WINTER LAMB PRODUCTION.

In tests at the Ohio station, two lots of 12 Delaine ewes each, with their October or November lambs from a Southdown ram, as nearly alike as possible with regard to age, weight, conformation and breeding, were fed for 62 days, beginning December 1, as follows: Lot 1, corn and oil meal 4:1, alfalfa and silage; lot 2, corn, oats, bran and oil meal 5:2:2:1, alfalfa, and silage. The nutritive ratio of the two rations was approximately the same. The hay and silage were fed ad libitum and approximately the same amount of grain was fed, it being all that they would consume. The lambs were fed alike, receiving corn and alfalfa. The ewes of lot 1 made an average daily gain per head of 0.095 lbs.; those of lot 2, 0.129 lbs.; the lambs of lot 1, 0.441 lbs., and of lot 2, 0.411 lbs. The cost of feed per pound of gain made by the lambs was 7.1 and 7.5 cents respectively. No appreciable differences in degree of finish from the two rations were noted. Both lots produced prime hothouse lambs.

Two lots of 11 ewes each, with their lambs, were fed for 95 days, beginning December 24, the same ration as in the above experiment, except that during the last five weeks clover hay was substituted for the alfalfa. As these lambs were not intended for hothouse lambs they were not forced so rapidly as those in the first experiment. The average daily gain per head of the ewes of lot 1 was 0.013, of lot 2, 0.031 lbs.; for the lambs of lot 1, 0.377 lbs., of lot 2, 0.333 lbs. The cost of feed per pound of gain made by the lambs was for lot 1, 8.7 cents, and for lot 2, 10.1 cents.

PROTECTING THE PIGS FROM SCURVY.

Quite often when pigs are running in tall pasture which is frequently wet with dew or rain, an irritating effect is produced on the skin and a sore condition commonly known as scurvy is the result. This is particularly true when hogs are pastured in rape which is more likely to have this effect than other forage crops in which the pigs may be pastured.

The remedy is to apply crude oil or some similar substance which will heal up the sores and protect the skin from further irritation. Where this is not done a stoppage of growth and sometimes the loss of the pig is the result. Often this will be neglected unless some special provision is made which will permit the hog to treat itself. Sometimes burlap sacks are wrapped around a post in the pasture and kept saturated with oil. Better and more economical are some of the modern automatic devices which will apply oil in suitable quantities whenever the hog rubs as he will do against any object when his skin is irritated from any cause.

This will be just as effective in subduing lice which often prey upon hogs where attention is not given to their eradication. It is attention to little details of this kind which make for efficiency in farm management and satisfactory profit from every department of farm production.

Oakland Co. A. R. FARMER.

A SIMPLE REMEDY FOR SCOURS IN CALVES.

If any of your readers have calves that are bothered with scours, if they will give them one tablespoonful of kerosene oil for two or three days it will give immediate relief.

Oakland Co. A. D. SPENCER.

Not many Colorado-fed lambs remain to be marketed, and the proportion of natives is increasing, these coming mainly from Missouri and displayed in the clean section of the Chicago stock yards.

Spraying for Codling Moth

REGARDING the number of sprayings which should be given for the codling moth, Dr. A. L. Melander, the entomologist of the Washington Experiment Station, suggests that sprayings be repeated as long as their cost is exceeded by the increased returns they assure. To expend a dollar in spraying in order to save 50 cents worth of fruit may generally be considered, economically, as a poor policy.

It is undoubtedly true that many orchardists spray more times than is necessary, that they get less than a dollar returns from a dollar's spraying. It is equally true that more orchardists do not spray enough, that it would pay them to invest more in their spraying. When the successful man sprays three times and the unsuccessful man four times, it seems paradoxical to state that the former has sprayed too much and the latter too little. An analysis of the reason for the latter's failure will most likely disclose two violated factors, the most important features of codling moth spraying; an incomplete calyx application and incorrect timing of the later sprayings.

Proper Time Important.

"Spraying for the codling moth should not be left to any convenient time, as it is definitely determined by certain periods in the life history of this insect. The spray is an arsenical poison that is effective only when eaten by the newly hatched worms. To give a spraying when worms are not hatching means a practical waste of material. Hence the importance of correctly timing the applications. A thorough wetting into every flower at the first spraying persists in its effects throughout the season and reaches the majority of the worms. As no other spraying does this the importance of thoroughness of the first application can scarcely be overstated.

The first spraying for the codling moth is given as soon as the blossom petals have fallen. The second spraying follows a few weeks later, at which time the first orchard worms are entering the fruit. These tiny worms are produced by moths which have practically all passed the winter in the ground in the shape of last year's cocooned worms. As the ground temperature is approximately the same year after year, irrespective of the earliness or lateness of the season, the date for the second spraying can almost be stated by calendar. The second week of June in Southern Michigan will time the second spraying as well as the usual breeding cage observations. This date, of course, would change with other locations.

The Third Spraying.

The early worms must feed in the apple, cocoon, emerge as moths and produce eggs before the appearance of the second generation of worms makes a third spraying necessary. This date can readily be determined by trapping the first generation of worms in strips of burlap fastened around the tree trunks. The cocoon, moth and egg stages together require about six weeks, placing the date for third spraying in Southern Michigan at about the fourth week in July. Other localities will vary according to climate. The effect of this external application of spray wears off in a month, at which time a fourth spraying may be given.

These five applications do not all have the same value. The first spraying can be given so as to be worth more than all the others combined. If thorough, wetting into every blossom, this spraying has time and again protected the crop. If poorly given, no amount of later spraying can make good the neglect.

To test the effectiveness of the first

sprayings some trees should be banded and a close watch be kept for wormy fruit when thinning. Obviously if such tests disclose many worms, later sprayings should not be omitted, but it should be equally obvious that if these sprayings have annihilated the first brood of codling moth little danger from a second brood need be feared.

TROUBLE DEPARTMENT.

The Huckleberry.

I would like information regarding the culture of the whortleberry, or fruit commonly known as the huckleberry. I am familiar with this fruit as to flavor and harvesting time, but would like to obtain some definite information on how to restore a once productive patch, whether plants may be produced from the seed, and if so where I could obtain them, and what season of the year would be proper to plant or set our sprays.

Baraga Co.

F. W. I.

The huckleberry is one of the delicious fruits which has not been easily adapted to improvement and cultivation. It is a plant which is very hard to propagate because it can not be grafted readily and is also hard to transplant. The growing of plants from seed entails a lot of care with little certainty of good results. On account of this difficulty of propagation, our propagation specialists, the nurserymen do not care to take a hold of it and push it as a commercial proposition.

The huckleberry belongs to the Heath family to which also belong the wintergreen and trailing arbutus. They are all wild plants which delight in rather low moist soils and do not adapt themselves to artificial culture.

The high bush huckleberry is more easily cultivated than the low bush one; the natural habitat of the low bush being the cracks and crevices of rocks. Those who have made a success in a small way of bringing the high bush berry under cultivation have taken up the plants which were found on the higher and dryer soils and transplanted them to open soils of a mucky and sandy nature. A mixture of sand and muck seems to make the best growing soil for them. They also seem to thrive better in a cool shady location than in the regular open field. Most growers who have been successful have kept the plantation mulched with coarse manure or straw. The best time for putting in the mulching is September, because it will then become packed down and moist, like leaf mold, by spring.

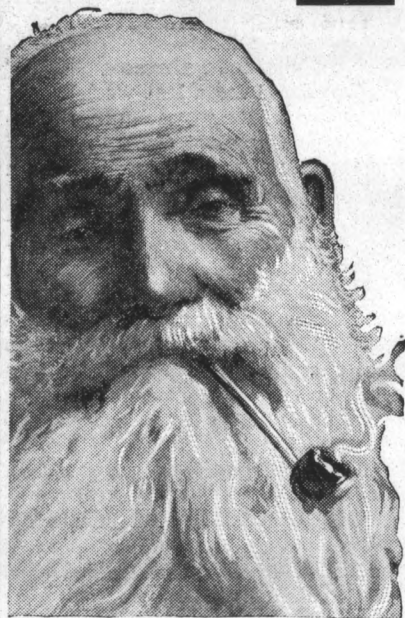
One of the chief factors in keeping a wild patch in productive condition is the burning over of the patch about every two or three years. This burning over rids the patch of weeds which begin to crowd the huckleberries and gives the bushes a chance to start anew.

We know of no place where the seed of the huckleberry can be obtained. The only way would be to macerate mature berries in water and then allow the pulp to dry and get the seed much in the same way as tomato seed is gotten.

Spring is the best time to transplant the plants, although one grower makes a success of setting sprays in September and then transplanting them to the patch in spring. The fall setting causes the formation of rootlets before the winter sets in and then when transplanted in spring the plants make a quicker and better start.

In time the huckleberry will undoubtedly be cultivated as the natural patches are disappearing and the huckleberry is too good a fruit to be entirely lost. The great variation in the size and shape of the bushes and berries indicate that the huckleberry would be very susceptible to improvement by selection.

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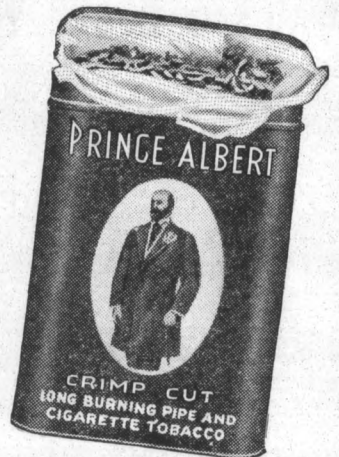
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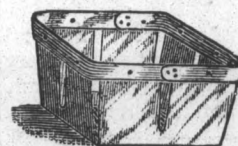
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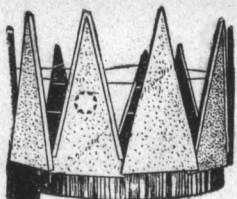
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Practical Science.

THE SUGAR INDUSTRY.

BY FLOYD W. ROBISON.
(Continued from last week).

Manufacture of Sugar Requires Constant Chemical Control.

The manufacture of sugar is not an exceedingly simple process. It is a process of extraction in the first instance from the beet, and in the second instance a concentration, and in the third instance a removal of substances other than sugar. This purification and concentration requires careful chemical control which is true not only in sugar beet factories but in cane sugar factories as well. All factories for the production of sugar maintain well equipped laboratories where the routine tests of raw materials and the finished product are continually carried on. The problem of getting the last traces of crystallizable sugars from beet juices and from cane juice requires pretty thorough chemical perfection in the method of manufacture and handling.

In the production of granulated sugar from cane and beet sources the highest type of perfection in the product is attendant upon a final bone-black or charcoal treatment, which removes the coloring matter and some of the undesirable flavoring principles as well. The beet sugar industry has arisen over the grave of the sorghum industry. Beets were not raised to any extent at all until it had been demonstrated that the growing of sorghum for commercial sugar purposes in the northern and central states was unprofitable and it is due to the unflinching and untiring energy of such chemists as Dr. Wiley and, in our own state, the late Dr. R. C. Kedzie, that the industry owes its development.

Sugar Has Gone Out of the List of Luxuries Into Necessities.

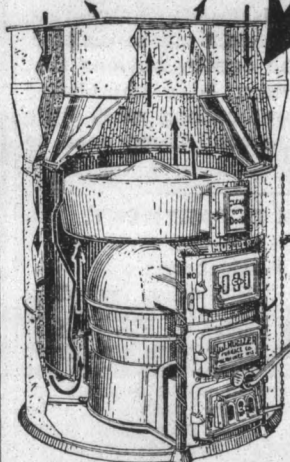
Very few consumers realize or appreciate what energy has been spent in the production of so pure an article of food as is our ordinary granulated sugar at such a reasonable price. Many who are enjoying this commodity at the present time can recall times when granulated sugar was comparatively unknown and when it first came upon the market it was considered a luxury. It has grown out of the luxury class into the class of necessities and if one doubts the fact that it has in this day become almost an absolute necessity, let him inspect the grocery bill furnished to the people in our cities, and he will find that granulated sugar is an important item in these accounts.

Utilization of By-products Measures the Efficiency of the Chemist.

The success of the chemist in the development of the sugar industry is undoubtedly responsible for his entrance into the corn products industry, and one is as thoroughly dependent upon the energy and resourcefulness of the industrial chemist as the other. Not only in each instance has an article of merit been developed to a high degree of perfection but most of the by-products which are incidental to the process of manufacture of the chief product sought are likewise economically utilized and so much depends upon the economical utilization of the by-products that in many industries which are under direct chemical control the success of the industry from a financial point of view depends almost entirely upon the by-products.

"Citrus Fruits," by J. E. Coit, and published by the MacMillan Co., gives an interesting and instructive account of the great citrus industry. It gives practical and up-to-date information on the growing and care of oranges, lemons and grapefruit. It is attractively illustrated, contains 520 pages and can be ordered through the Michigan Farmer for \$2.00.

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PUBLISHED WEEKLY. ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

A TREE is one of the most beautiful and wonderful things in the world," said Tinker Teedle Tee, the merry little elf to Billy Be By Bo Bum, as they trudged through the White Forest after leaving Frisky the Red Squirrel to gnaw through the pine cone and get the juicy seeds hidden inside. "Ever since the world began, trees have helped men and animals in one way or another. In fact, I don't know how we would get along if it wasn't for our friends the trees. It makes us Little People who live in the woods feel sorry every time a tree is cut down, for we know what good friends they are."

Just then Billy and his companion

Land O' Nod Stories.

By HOWARD T. KNAPP.

How the Forest Feeds the Brook

came to the bank of a creek, only there wasn't any water in it now, nothing but big smooth stones and pebbles, covered with snow, and here and there a log that had been washed down by the spring freshets.

"It's as dry as a bone that has lain out in the sun all summer," said Billy. "But last fall when we had that aw-

fully hard rain, the water was rushing down here two or three feet deep. Then the next day there were only a few puddles."

"And yet when your father was a boy, there was plenty of water in this creek all the year round," replied Tinker.

"Then why isn't there any now?"

"Because," replied Tinker, shaking his finger at Billy and looking very wise, "because the lumbermen have cut down all the big trees that used to cover all the hills for miles about."

"How did cutting down the trees make the creek dry up?" asked Billy in surprise.

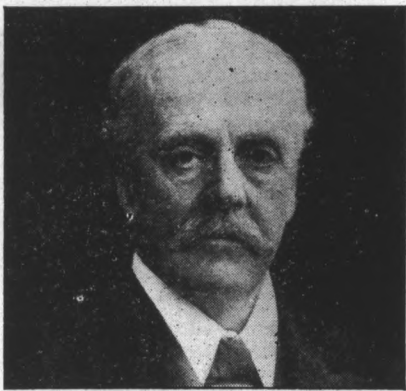
Before replying Tinker pulled out a tiny handkerchief, just about as big as the end of a lead pencil, and very carefully brushed the snow from the top of a log nearby. Then he sat down and pushing the weeny copper kettle that served him for a hat onto the bag of his head, replied:

"You see, Billy Be By Bo Bum, the roots of the trees keep the ground

WORLD EVENTS IN PICTURES



Count of Turin Commands Italy's Cavalry.



Arthur J. Balfour, now First Lord of the British Admiralty.



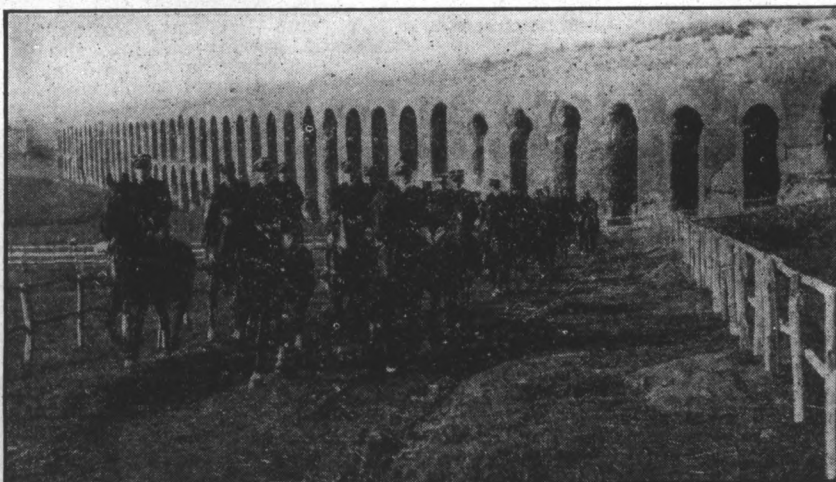
Knights Templar March 15,000 Strong in Mighty Pageant at Annual Conclave in Philadelphia.



Captain Turner of the Ill-Fated Lusitania.



Gen. Caneva, Commander-in-Chief of the Italian Army.



Italian Cavalrymen on their way to the Front, Pass Roman Aqueduct Built by the Caesars.



Chilean Delegates at the Recent Pan-American Financial Conference held at Washington.

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soft and porous, just like a sponge. So when it rains, the earth soaks up the water, which filters down through the ground, giving the thirsty roots a drink on the way, until at last it strikes a layer of rock or clay. Of course, the water can't soak through that, so it runs along the vein of stone until at last it bursts through the side of the hill. Then it trickles down over the rocks until it hollows out a shallow hole in the ground, and that is a spring. When the spring fills up, the water bubbles over the top and goes tumbling down the hill until it finds its way into the creek.

"But," and here Tinker looked very solemn indeed, "when all the big trees are cut down, the earth becomes hard and as there are no thirsty roots to suck the water down into the ground, it just runs right down the sides of the hills and pours into the streams all at once. Then for a little while the brooks are nearly as large as rivers, but when the rain stops, they dry up, for all the water has run off at once, and not enough soaks into the ground to feed the springs and they too, dry up."

"But don't the little trees grow up when the big trees are cut down?" asked Billy.

"Sure they do, but it takes many, many years," Tinker replied. "Why, Billy Boy, that little sapling there is older than you are, although it isn't as large as your wrist, and if this big pine hasn't lived more than a hundred years, then I miss my guess."

"How long do trees live?"

"Hundreds and hundreds of years sometimes," replied Tinker. "Don't you remember in the Bible it tells of the Cedars of Lebanon that King Solomon cut down when he built his wonderful temple? Well, Solomon's temple crumbled into dust more than two thousand years ago, but some of those same cedars that were big trees when he was alive, are still standing on the sides of Mount Lebanon. Some men say they must be at least three thousand years old."

"Out in California there are some big trees too, called the Giant Redwoods. They are among the largest trees in the world. They are as large as a house, and as tall as a church steeple. Men have cut an archway through the base of one tree, and the stage coach can drive right through it. On the stump of another tree, sawed off square, dozens of people can dance at one time. So you see how large those Redwoods must be."

"But I don't see how you can tell how old a tree is," said Billy.

Tinker spread his wings and flew to the ground. Then he ran around to the end of the log on which he had been sitting and brushed the snow off the butt of the log with his funny little handkerchief.

"See all those rings on the end of the log?" asked Tinker. "Well, each one of those rings represent a year of the tree's life. Every year another ring is added, so by counting the rings you can tell how old the tree is."

THE RED MIST.

By RANDALL PARRISH.

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CHAPTER IX.—(Continued).

"On his way east to Hot Springs, with an escort of soldiers. It was there he was killed, together with his servant. A messenger brought the news."

"A soldier? One of Captain Fox's men?"

A sardonic smile flickered an instant on the preacher's thin lips.

"No; but equally reliable; one of Ned Cowan's mountaineers. Captain Fox is a prisoner, wounded and his men mostly dead."

A moment she rested unknowingly against my arm, her face covered with her hands. There was that in the man's words and manner which convinced her that he spoke the truth. Nor could I strengthen her by any denial, comfort her by any expression of hope. There was not a sob, not a sound to indicate suffering, but the face she finally lifted so that the light again fell upon it was white and drawn. The girl had changed to a woman. She stood erect, alone, one hand grasping the back of a chair.

"You say my father is dead—killed," she said, in steady, clear voice, "and that Captain Fox is wounded, and a prisoner. You tell me this on the report of one of Ned Cowan's men. It may be true, or it may be a lie, concocted to frighten me. But be that one way or the other, you never came here tonight, through this storm, to bring me such a message alone. Who sent you, Parson Nichols? What devilry is on foot?"

"My dear young lady," he began smoothly, spreading his hands deprecatingly. "Be charitable, and just. I realize that in the first shock of thus suddenly learning of your father's demise, you naturally speak harshly. With me the past is forgotten, blotted out, covered with the mantle of Christian charity. I felt it my duty to break to you this sad news in all possible tenderness."

"And you had no other object?"

"Certainly not; what other could I possibly have had?"

The man lied, and I knew it; the

suave, soft tones of his voice irritated me. That he was a sneaking, canting hypocrite I realized from the first glance, and my fingers itched to grip him by the throat, and wring the real truth out of him. The girl stood motionless, silent, her breath coming in sobs. Then she turned her head slightly, and her eyes met mine. The piteous appeal in their depth was all I needed. With a grim feeling of delight, I took a step forward, and the muzzle of my revolver touched his breast.

"Now, Mister Preacherman," I said shortly, "we'll have done with this play-acting. Not a move! I understand firearms. It is a soldier, not a girl, you are dealing with now."

CHAPTER X.

The Jaws of the Trap.

If eyes alone possessed the power to kill, his would have done the deed, but the face with which I confronted him was sufficiently grim to make him realize the danger of a movement. He gave back a step, but my revolver pressed his side.

"Listen to me first," I continued, "and be careful how you answer. I may know more of this affair than you imagine, and I am not tolerant of lies. You came here tonight expecting to find Miss Harwood alone in this house. You were told she was here, and instructed to come. There was an object in your visit—a special purpose, in which others were also interested. You did not expect to have to deal with anyone but a young, unprotected girl. You were so certain of this that you are not even armed. You came in advance of others, and under orders but, finding me here, you dared not openly avow your real object. That is the truth, is it not?"

He made no reply, his lips tightly closed, his deep-set eyes scarcely visible.

"Don't try obstinacy with me, Nichols," I said sternly, "for you are either going to talk, or die. I'll give you one chance, and one only. I despise your kind, and will kill you with pleasure. Now answer me—who told you of Major Harwood's death?"

"I have said already; the message was brought to Lewisburg by one of Ned Cowan's men."

"Yes, so you did; but you never received it at Lewisburg. Oh, yes, I know something myself. The fact is

you never came here tonight from Lewisburg, now did you? Do you want me to tell you where you came from? Well, it was the mountains the other side of the Green Briar—from old Ned Cowan's camp. There is where you learned of Harwood's death, and of the attack on Fox. Now are you ready to talk to me? Oh! you are! Very well, who sent you—Cowan?"

I ran my gun muzzle hard into his ribs, and he nodded sullenly, his lips drawn back in a snarl. All the soft palaver had vanished, and he had become a cowed brute.

"I thought so; you belong yourself to the Cowan gang?"

"Not—not in their deeds of blood and violence," he protested. "The calls of my church compel me to minister to my scattered flock—"

"Never mind that kind of palaver, Nichols. The fact that you were with that old devil, and that he sent you here, is all I wanted to learn. Now what did he send you for?"

I waited, my eyes on his. I could not see the girl, and dare not avert my gaze for so much as an instant. The man wet his lips, as if they were parched, and I could perceive the nervous movement of his throat.

"Well, you are slower in answering me than is altogether safe. I'll warn you this once. Ned Cowan knew, by some means, that Miss Harwood was alone in this house tonight. He ordered you to come here for some special purpose of his own—what was it? Is he coming later?"

"I—I don't know."

"Don't know what?—this is my last call!"

"I don't know whether he is coming or not," he blurted out reluctantly. "He was hurt in the fight."

"And if he cannot come himself he means to send others. What for? To loot the house? Come, it must be something different from that, or he would not be so anxious to surprise the lady here alone. You know, Nichols! and you are going to answer! What does he want of the girl?"

My hammer clicked, and the man cringing back, read the stern meaning of my face. A terrible suspicion surged over me, and I was ready to kill. He knew his life hung by a hair.

"To—to marry her," the words barely audible.

"Marry her!" I echoed. "What in heaven's name do you mean, man—old Ned Cowan marry her?"

"No," he stammered, as though fearful he could not explain fast enough. "Not old Ned—his son, Anse."

I heard the startled exclamation of the girl behind me.

"Anse Cowan!" she cried, her voice full of undisguised horror. "Marry me to that low brute. Did he ever imagine I would consent, ever even look at him?"

I touched her with my hand in restraint, the revolver still at the minister's heart. The whole foul plot lay exposed in my mind.

"There was no intention of asking your consent, Miss Harwood," I said, satisfied that she should know all, and face the truth. "There is a reason for this desperate act which I do not wholly fathom, but it has to do with the property here, and the feud between Cowan and your father. If Major Harwood be dead, as this man reports, you are the sole heir, and old Ned has conceived the idea of marrying you by force to his son. He has learned you are here alone, and unprotected, and in this creature of his—this canting preacher—he has found a fit tool ready at hand to do his dirty work. Is that it, Nichols?"

He muttered something inaudible.

"They sent me on ahead to make sure Miss Harwood was here, and to remain until they arrived."

"How many are going to be in this happy wedding party?"

The man shook his head sullenly, and I gripped him by the throat.

"Answer, you black-hearted cur; you have confessed too much to hide anything now. How many are coming with Anse Cowan?"

"Maybe a half dozen of the boys. I don't know; they were talking about it when I left, and thought it was going to be a great lark."

"Well, it is; you are finding that out already. When were they to be here?" I shook him to loosen his lagging tongue.

"They were to ride out an hour after I did."

I threw the wretch back into the chair before the fire, but held him still covering before the point of my revolver. The dog had told us all he knew, and there was a snarl to his thin lips, drawn back and exposing his yellow teeth, showing that his only thought now was revenge. Any moment that gang of ruffians might appear, and I was helpless there alone to contend against them. Indeed there was no way in which we could hope to protect ourselves, unless it was by flight through the storm. There might

yet be time for that effort, although it was impossible to decide which might prove the safer road to choose. I had arrived on foot, yet surely Miss Harwood must have a riding horse stabled somewhere close at hand. These considerations flashed through my mind, as I stared into Nichols' face. The house was silent; the only sound the noise of wind and rain, the anxious breathing of the girl pressing against my shoulder. I dared not move, dared not avert my gaze from the preacher; there was hatred and treachery in the depths of his eyes.

"Is there a lock on the parlor door leading into the hall?" I asked.

"A bolt—yes."

"Please close and bolt it, and then come back here."

I heard her turn and cross the room and caught the sound as she shot the bolt, and her light step again on the floor.

"Now, something to tie this man with. We must be quick—the tablecloth will do! sweep that clutter of dishes onto the floor. Good! now cut me the cord from that picture."

I had no thought of glancing about; I can scarcely conceive even now that I did, yet my eyes must have wandered an instant, for Nichols had the wrist of my pistol hand in his grip, and jerked me half off my feet. Even as I staggered, I struck out with my left, landing fairly on his face, and he went back over the chair, crushing it beneath him. But as he fell he dragged the revolver from my fingers, and sent it spinning across the floor. The next instant we clinched, our bodies pressed half way into the fireplace. There was a moment of fierce, breathless struggle, during which we rolled out against the table, our limbs interlocked, our hands gripping for advantage. The girl never screamed or emitted a sound. Some dim consciousness told me she was held prisoner between the table and wall, the revolver on the floor beyond her reach. I had no time to think, to do aught but fight desperately. He had my throat in a grip like iron, and my fingers were twined in his hair. But my left arm was free, and I drove my fist again and again into his face in short jabs that brought blood. The fellow possessed no skill, but the wiry strength of a tiger. I found his eyes with my fist, and dazed, his hands released their grip, and I broke loose, my throat livid from his finger marks. The flap of a gray skirt touched my face, and a blow fell—the man went limp under me, his head upheld by the angle of the wall. I struggled to my knees, still staring at him, uncertain as to what had actually occurred, struggling for breath. The girl stood over me, white-faced, her eyes wide open with horror, the remnant of the teapot in her hand. Suddenly her hands covered her eyes, the fragment of crockery falling noisily to the floor.

"I—I struck him," she sobbed, unnerved. "I—I have killed him!"

"No such good luck," I answered, recovering myself, and grasping her hands, so that I could look into her eyes. "The man is not dead—only stunned by the blow. He will be conscious in a minute. Do not become frightened; you did right, and we have no time to lose. You have a horse somewhere?"

"Yes, in the stable."

Get whatever you need for a ride through the storm. Be quick, for those villains may be here at any moment. I'll tie Nichols, and wait for you at the foot of the rear stairs."

She hesitated, her hands still in mine unconsciously.

"You—you mean I am to ride for Lewisburg—and—and you?"

"Oh, I must do the best I can on foot. We'll keep together as long as possible; only you must not fall into the hands of these men—not if this fellow is a specimen of their class."

"Him!" she looked at him with disgust, curling her lips. "I am not afraid of him, but—Anse Cowan," she shuddered, staring out into the dark hall. "I—I would rather be dead than have that foul beast touch me."

"Then go, as I say, and hurry. Get a wrap, and your revolver."

She slipped out of the room, and up the stairs, her light steps making no sound on the soft carpet. I bent over Nichols, and as I touched him he stirred and opened his eyes, staring up into my face. The heavy pot had cut a deep gash in the side of his head, which bled freely, and one of his eyes was puffed nearly closed where I had pummeled him. There was not fight left in the fellow, and he cringed back at sight of me, flinging up his arm in defense, all manhood beaten out of him.

"Don't hit me!" he whined. "I'm no friend of Anse Cowan."

"So you've had enough! Then take orders from me."

I gathered in the picture cord the girl had dropped on the floor, deciding swiftly what it was best to do. If I left the fellow lying bound there those

new arrivals would discover him as soon as they got into the house. His story would make clear our escape, and how we had gone. Every moment of delay was of the utmost value, and if I could successfully hide this preacher where he could not be so easily discovered, the search for him would retard pursuit—his friends would be puzzled by his disappearance, and waste time seeking for him.

"Turn over, Nichols! Oh, yes you can—all that troubles you is a sore head. Come, move quick; that's it. Now put your hands behind your back—both of them. I mean to have you safe this time."

His wrists were big and knotted, and I drew the cord tight enough to make the fellow wince, despite his groans and pretense at severe suffering. There was no reason why I should spare him, nor could I feel any inclination to do so. I jerked him to his feet, using no gentle methods of persuasion, and turned his face to the door, picking up the lamp to give light for the journey.

"Go up the stairs," I commanded sternly, "and keep close to the wall. Oh, you can walk all right, my friend, and I advise you to do as I say—you see this gun?"

The scowl on his face was malignant, and his eyes glowed like coals, but he moved on ahead of me across the hall, and up the carpeted steps. The lamp held high above my head in one hand, sent a stream of light through the black shadows, and revealed his every movement. Once he paused and glanced back over his shoulder, muttering some threat for which I cared nothing, but the gleam of my revolver caught his eyes, as I lifted it to a level, and he went on, growling to himself. At the head of the stairs the girl suddenly appeared, her face showing white in the glow of the lamp. A brown cape, fastened closely at the throat, enveloped her figure, and a cap was drawn down over her hair.

"What is it?" she questioned swiftly. "Have the others come?"

"Not yet, but our friend here revived, and I thought it best to put him where he would be safe. Is there any room up here windowless, and with a door that can be locked?"

She glanced about, uncertain.

"Why—oh, yes! there is a large closet off my room where he might be locked in. He—he was not badly hurt?"

"Nothing more serious than a headache. Turn to the right, Nichols; into that room, where the light is burning. Oh, yes, you will! Kindly open the closet door, Miss Harwood! Ah! a prison cell made to order. Comfort enough here Mr. Preacher, and ample room for your length of limb. It will be a fine place in which to meditate. Step in, man! Don't stand growling there, for it will do no good—we have ourselves to think about. Get in, I say!"

He was so slow, that I thrust him roughly through the opening, and closed and locked the door. The girl had placed the lamp on a table, and as I turned, her eyes met mine.

"Suppose the—they fail to come," she questioned. "He might not get out; he might die in there."

"Little danger of their not coming. Anyhow, I prefer risking that fellow's life rather than yours. Is he really a preacher?"

"Yes; he has a church at the Cross-roads. I heard him preach once at a camp meeting. He was here before when Tom's wife died, and conducted the funeral."

"Tom, one of the servants?"

"Yes, my father's body servant. He accompanied him to the army." The tears rushed to her eyes, dimming them, and her hand touched my sleeve. "Oh, Lieutenant, do you really suppose he has been killed?"

"We can only hope," I answered catching my breath quickly. "Nichols may have told that for a purpose—a desire to make you feel helpless and alone. But we cannot stand here and talk. You know the way and can guide us in the dark, can you not? It will be safer not to leave the lamp burning."

I blew the light out without waiting for an answer, and took her hand in mine.

"Now you must lead," I said softly. "We will go down the back stairs."

We slipped out into the hall together, her clasp on my fingers warm and confident, and I closed the door of the room behind us. Nichols had shouted some threat as the lock clicked, but was now silent. The soft carpet under foot enabled us to move noiselessly, and there was no sound in the deserted house. A flash of lightning enabled me to glimpse the window at the end of the hall, and my companion's face. She looked pale under the peak of her boy's cap, her eyes large and opened wide, a strand of loosened hair shadowing one cheek. Then it

was pitch darkness again, and all about us the silence of a tomb. My hand encountered the baluster rail, and she had taken a single step downward, when we heard a voice below, and the crash of what was probably the stock of a rifle on the outer door. A second blow fell, followed by the sound of splintering wood. The voice came sharper, clearer; I could distinguish the words.

"Now, once more, Kelly! There's nothing to be afraid of, man. Break it a foot lower down, so I can reach the key. Where is Anse, do you know Jake?"

"He an' Bill are 'round front," some fellow answered hoarsely. "That's a busted winder thar. Yer saw ther light up stairs didn't yer?"

"Sure—the gurl's yer all right, but it don't look as if the preacher wus. I reckon he got afeerd, an' wus waitin' fer us to show up first. Here, you, Kelly, giv' me abolt on thet club."

She shrank back against me, with a little startled cry, and I held her close. There was no noise as yet toward the front of the house, but two of the villains were there—one of them Anse Cowan. Beyond doubt they had entered the parlor through the broken window, and were groping about in the darkneess, seeking for some passage leading into the hall. We were in the trap, caught between the closing jaws.

(To be continued.)

MEMORIAL SUNDAY, 1915.

BY C. N. SINNETT.

On this still Sunday ere the decoration
Of heroes' graves on many a plain
and hill,

Let thoughts of how God still keeps us
a nation

Each heart and soul with deep
thanksgiving thrill.

'Mid shadows dark may we His hand
discover,

Where all seems gloom may we discern
His light,

And where the black and ominous
clouds do hover

May we be sure that He will guard
the Right.

When "Forward March" rang through
the mountain passes,

And echoed out across the rolling
waves,

Men's hearts were stirred as winds
now stir the grasses

That freshly spring upon the sol-
diers' graves;

And "Right is Right" a thousand
strong tongues uttered,

And, mustering from the cot, and
hall, and fields,

The flag of Freedom in each bright
breeze fluttered,

And Liberty shone clearly on the
shields.

And, as each hero's grave has now its
banner,

Its gift of flowers of red, and white,
and blue,

May each glad heart give praise and
loud hosanna

For those who loved their land so
brave and true;

Their work gives to us all the blest
assurance

That if the Right should challenged
be again

Descendants strong, knowing of their
endurance,

Shall smite the foe, truth-loving,
manly men.

TO MARKET.

BY CORA A. MATSON DOLSON.

To market with her eggs she went,
The pretty farmer-lass;

The farm-lad, on his task intent,
Smiled as he saw her pass.

A pound of tea, a ribbon blue,
A clerk's admiring thought—

'Tis doubtful if the lassie knew
How much the white eggs brought.

But well the little farm-lass knows
The sturdy farm-lad's way,

Who waits her, in his blue jean clothes,
To learn how white eggs pay.

OPINIONS OF GREAT MEN.

The everyday cares and duties, which men call drudgery, are the weights and counterpoises of the clock of time, giving its pendulum a true vibration, and its hands a regular motion.—Henry W. Longfellow.

Happiness is a sunbeam, which may pass through a thousand bosoms without losing a particle of its original ray.—Sir P. Sidney.

Keep before thee the idea of what thou wouldst attain. Thy steadfast thought will be a prayer, not a prophesy, working out its own fulfillment.—Trinities and Sanctities.

No one will ever shine in conversation who thinks of saying fine things: to please, one must say many things indifferent and many very bad.—Francis Lockier.

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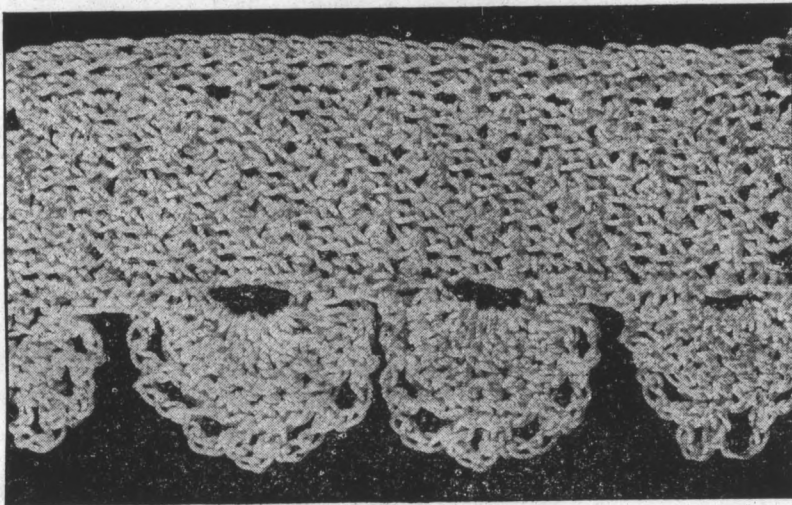
Grace Accepts Defeat and Achieves Victory

WITH a sigh of relief Grace Ludlow dropped down in the low wicker rocker on the side porch, and raised her flushed face to the cool breeze. She had a whole half-hour to herself before time to start supper, 30 long minutes to do absolutely nothing, not even think. She had brought a magazine with her, but she didn't intend to read it, for she knew she'd be sure to strike on one of those tiresome articles that told a wife all about how she ought to live only to please her husband. If she might happen on one that told a husband some of the things he ought to do—

Her reflections broke off at this point as her eyes alighted on a dirty harness piled in a heap in one corner of her neat porch. An impatient frown

could get up now and carry it out to the barn and hang it in its place, but John would never know she did it unless she told him. He had already forgotten where he left it, and he'd simply wonder why she put herself to all the trouble of lugging it across the yard in the hot sun. He would never even suspect he was being delicately just shove it off the porch in a heap and thus call his attention to it. But she'd realize all the time it lay there on the ground even though she could not see it, and it might as well be on the porch. It was out of place, that was the rub.

Well, the best thing would probably be to put it away, she could at least rest when it was out of sight, and she could try to impress on John tonight



Design in Crocheted Edging for Petticoats.

puckered her brow. She arose to remove it, and then sank back to let the full enormity of its presence sink deeper. Admonish wives to please their husbands indeed! How many times had she asked John not to leave harnesses and muddy boots and horse blankets on the porch! And now when she was so tired she could scarcely breathe she must needs come out and have that thing to take her mind off the charming vista of fields and lake and wooded hill.

How could you cure a husband of disorderly habits? Why not write an article on "How I broke my husband of littering the side porch?" instead of on "How I kept my husband's love?" It would be far more useful to the average farm wife, Grace reflected. This one porch was the bane of her existence. She could keep the rest of the house in apple pie order, but this one spot John would insist on using as a catch-all for everything he didn't know what else to do with. Grace argued that the barn was the place for harness, whips, blankets, robes, grain bags, etc. She could even succeed in getting the debris cleared away for a day, perhaps, but it always accumulated again. This morning there hadn't been a thing there, and now when she had been so sure everything was done that should be done, and that all she had to do was to exist, here was a wretched harness left to spoil everything.

What should a woman do in such a case if she wished to achieve ultimate victory? She might just leave it there till supper time and order it carried hence, but that would perhaps involve a display of temper and she was really too tired for so much exertion. She

kitchen with his usual air of being too big to be confined in such a small space. He threw his hat in one corner and stooped to kiss Grace's flushed cheek. She received his greeting with a pensive air of having decided to make the best of things no matter how bad they got, and then walked over to pick up the hat and hang it up. Her very back spoke mute reproach.

"You'll find your harness hanging up on its hook in the barn when you want it," she said, as she hung the hat on its proper peg. "I found it on the side porch this afternoon when I went out to rest, so I put it away for you. I knew you must have forgotten it."

"Oh," said John, as she turned to the washroom, "I didn't exactly forget it. I was going to mend it after supper and I just thought it might as well lie out there till I was ready."

"The side porch isn't the place for harness," said Grace. "I don't leave my mending lying around any place that happens, until I'm ready to do it."

The creaking of the cistern pump cut off further argument and Grace hurried the supper on the table. She was so tired when the men sat down she did not want to eat. The easy chair on the quiet porch was more alluring than the hot food, so she slipped out to rest. They'd be at least 20 minutes at table, and she'd have 20 minutes of peace. She turned to her rocker in the far corner, then stopped short. There in front of it lay the harness.

The funny side of the situation struck Grace suddenly. Too tired to really laugh, she giggled and cried hysterically. Attracted by the weird sounds John appeared in the doorway.

"I brought it along as I came from the barn," he said, divining the situation, "but if it's going to have that effect on you I can take it back."

"No, I give up," said Grace weakly. "I don't know whether it's your bump of order or my sense of proportion that is too blame. We don't seem to get together on the purpose of a side porch, but I won't insist any longer. Pile anything on it you like, and I'll promise not to see it. I can't even see that harness, now, I'm so enraptured with the colors in yonder fleecy cloud."

"You'd look swell in a dress that color," John replied admiringly, picking up the harness. "I can mend this thing in the carriage house, I guess. There's just as much daylight there as there is on this porch," and calling to the hired man to bring the milk pails, he carried the harness back to the barn.

DEBORAH.

Crochet Petticoat—By Mae Y. Mahaffy

FOR a snugly fitting yoke petticoat one should follow the individual measurements as nearly as possible; hence, it is rather difficult to give definite instructions as to the number of stitches and increase needed. However, a worker can readily make such changes as may be required in their particular case by laying the work on a good fitting skirt yoke pattern, or by measuring round the waist and hips at frequent intervals as the crocheting progresses. A chain of 170 stitches (sts), will usually be found sufficient to begin with for a medium sized figure. This chain (ch), should allow sufficient leeway for considerable shrinkage around, as only the greatest care in laundering will prevent this feature, although in the mat-

ter of length the opposite is usually the result.

Double crochet (dc), into every ch st for the 1st row. Continue the yoke in dc, using a ch of 3 to turn, for at least 30 rows, bringing the yoke well down over the hips to the distance necessary for placket opening. If needed, increase in every row by placing 2 dc in one, thus making 6 extra sts each row. These should be about an inch apart at the three points. For instance, if 170 sts are used increase at 31st and 37th, 82nd and 88th, 133rd and 139th.

When the yoke portion is deep enough proceed for the skirt proper with what is commonly known as the Newport st, a series of sc and double treble crochet, (dte). In a straight

strip these would necessitate breaking the thread at the end of each row, as turning is not permissible, but since the skirt is worked around and around below the placket we will need only to slip (sl) st. together and proceed with the next row. The dtc is made by throwing the thread over hook twice, draw thread through work, throw thread over hook again, thus making four loops on hook, thread over hook again and draw through two of the loops; throw thread over again and draw through two of the loops; throw thread over again and draw through two more loops; throw thread over and draw through two remaining loops.

For the 1st row work 1 sc into each dc of previous row.

Second row.—1 sc in every st, taking up back or top of st only.

Third row.—1 sc in back of st; 1 dtc in st of next to last row made, that is, drop down a row; 3 sc in back of sts of last row; 1 dtc into st of next to last row again, and repeat to end of row.

Fourth row.—2 sc, the first being in back of st only, the one over previous dtc into entire st; 1 dtc, dropping down a row; 2 sc in back of sts only, 1 sc through entire st. Repeat thus all the way around. And repeat the entire row for as many rounds as may be necessary to complete length required. There must always be 3 sc between the dtc, thus placing the dtc in each successive row just in advance of that in the previous row. The sc above the dtc must be through the entire st, the remaining sc sts through back of sts only. The stitch is shown in the body of accompanying sampler.

If desired a band of some other stitch may be used near the bottom. A very pretty effect is made by placing a few rows of sc or dc, and then another space of the Newport st, running five or six rows with the trebles all in advance, and an equal number with the trebles gradually receding, making the work in zigzag effect. Another band of sc or dc should then complete the bottom of skirt, except for the scallops which may be of any style preferred. In the illustration solid scallops are shown which will not catch on shoe buttons, a desirable feature. These consist of a ch of 5 caught into 4th st in advance. Turn, sc 2 over ch, dc 2, dtc 1, dc 2, sc 2. Turn, sc 12. Turn and make 7 loops of 3 ch each to complete scallop. Then sc 4 into skirt edge before starting the next scallop.

Make a beading at belt line for tape or ribbon. Fasten on yarn, ch 4, dtc 2, ch 3, skip 3, dtc 3, ch 3, sk 3, dtc 3, etc., all the way across. Finish beading and placket with a shallow scallop made of 1 sc in 1st st, 2 ch, 1 dc into same st as sc; 2 ch, skip 2, 1 sc, 2 ch, and 1 dc into same st as sc, etc.

HOME CANNING FOR THE FANCY TRADE.

If the subject under consideration had been supplying the demands of the fancy trade, it would be not only an easy matter to write a long article but an interesting one to fancy consumers, as well as home workers who would like more information on such an important branch of home-mades. Perhaps, however, were the fancy traders not so exacting we would be satisfied with less perfection in attaining an article of high standard. The trade demanding the best, we can only feel grateful to them if it is such a stimulus we need, and many times the best is only brought out by this demand.

If the demand once met could be kept by a first supply, the second and most important part of the business, fruit quality, would be the producer's greatest capital. There is an ever constant effort to be made. Each season the customer must be met on the assumption that the order of the previous year was all that could be desired.

It should be our first consideration and interest to make new and better varieties. The varying tastes, often we would say capricious whims, of the appetite keep us from falling into easy ways.

The style of the package is not the only feature remaining to make the article palatable. It is an important factor, however. An attractive package with a winning label, will often invite closer inspection and, with the product done properly, the selling agent has everything in his favor. A successful selling agent is dependent upon the producer for the fancy goods, and he can not fool the public long for us.

Unless the producer is ever in a critical attitude, constantly watchful, many oversights, small in themselves, but all-important in the finishing, will creep in with even the most conscientious workers. Quality and coloring depend on this vigilance. Perfect fruit brings perfect results, but it is not always available in a condition for easiest results, and so much depends upon this stage of ripeness. Experienced persons should oversee the picking at just the right time. Slightly under-ripe fruit is to be preferred if any chances are to be taken in not getting it at just the right stage, as the color, flavor, or aroma more acutely speaking, and consistency can better be produced if under-ripe than if over-ripe.

The acids in the fruit play a very important part in our troubles and successes. They can not be overcome with sugar. Too much sweet and too long cooking give a bitter or strong taste and stringy consistency and destroy the flavor. An intelligent use of sugar might be mentioned as a key to the whole situation. While a feeling of security must be with the producer, there are many obstacles to be overcome, such as over color, under color, too acid, too juicy, too dry, lack of pectin to bind properly, etc. Conditions favorable one season may be very unfavorable another. These troubles are ever present. They can not be anticipated. They must be met and overcome and it can only be accomplished by being ever watchful and interested.

Producing a fine preserve from one fruit does not mean all varieties are produced under the same method. Each variety has its own way. It must be met and understood to turn out the same finished product of excellence.

Even with perfect fruit conditions errors are to be watched for from assistants who do not realize the great need of thorough details, trifling though they appear to all except the anxious producer and exacting consumer. With this exacting market back of us, there is created an incentive to produce only the best and soon a determination is created to be satisfied with only the best. We are then, it seems to me, indebted to this exacting trade for bringing out in us our ability to do things that might otherwise remain dormant. We are carrying out an impulse to be satisfied with only the best, if the best is producing preserves for the fancy trade.

The pure food demands have helped us by eliminating the coloring matter and exposing many of the ways of producing a good looking only. It is hard to excel the carefully selected and prepared sweets from the hands of a woman who has a natural aptness and fondness for those things. There is a field open for such workers. There is an opportunity for a home worker for just the good sauce "mother used to make." It requires fully as much thought and careful treatment, but it smacks of a big second helping, while the preserves stand for a small portion. Mother Nature has given us generously from her great stores and it is up to her daughters to give it back finished with the intelligence she has also created.—R. de R.



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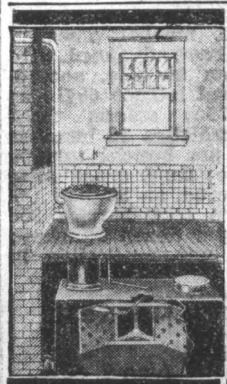
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Markets.

WEATHER FORECAST.

Weekly weather forecast for the region of the Great Lakes for week beginning Wednesday, June 9. Rain is probable on the ninth and again about the twelfth; the temperature will be somewhat below the season average.

GRAINS AND SEEDS.

June 8, 1915.

Wheat.—For the past two weeks wheat values show a rapid decline. Both domestic and foreign causes for the decline are ascribed by the trade. Recent weather conditions have favored the development of the home crop overcoming some of the expected damage by the Hessian fly and other pests so that the promise is now for the greatest crop America has ever grown. Then, too, harvesting will begin earlier than was expected, thus requiring less cash wheat to supply the demand until new wheat is marketed. The foreign demand has also slackened and India reports a yield that exceeds the normal crop. Shipments from the latter country to Europe have already begun. One year ago No. 2 red wheat was quoted at 95½¢ per bushel. Quotations for the week are as follows:

	No. 2	No. 1	
	Red.	White.	July.
Wednesday	1.35	1.32	1.17
Thursday	1.35	1.32	1.18
Friday	1.33	1.30	1.16½
Saturday	1.32	1.29	1.15½
Monday			
Tuesday	1.28	1.25	1.12½

Chicago.—July wheat \$1.11½; Sept. \$1.08½ per bushel.

Corn.—Corn values have declined with wheat, although there are some features to this market that give the trade a slightly stronger tone. For instance, corn planting has been considerably delayed in many sections by recent rains and in other places where planting was done earlier the cool weather retarded germination and growth. Receipts have also been small, statistics showing that at Chicago they have run lower than for the past five years. Now that farmers are through with spring seeding and planting, it is expected that larger deliveries will be made by them. One year ago No. 2 corn was quoted at 74¢ per bushel. Prices for the past week are as follows:

	No. 3	No. 3	
	Mixed.	Yellow.	
Wednesday	75	76	
Thursday	74½	75½	
Friday	74	75	
Saturday	74	75	
Monday	72	73	
Tuesday	72	73	

Chicago.—July corn 70.7c; Sept., 71.4c per bushel.

Oats.—Notwithstanding the decline in the other grains, prices for this cereal have held firmly steady throughout the week, although a decline is noted since two weeks ago. The new crop is developing normally in most of the important oat growing states. Demand for cash oats is ordinary with only a fair supply on hand. One year ago standard oats were quoted at 43½¢ per bushels. Quotations are as follows:

	No. 3	
	Standard.	White.
Wednesday	53½	52½
Thursday	53½	52½
Friday	53½	52½
Saturday	53½	52½
Monday	52	51½
Tuesday	52	51½

Chicago.—July oats 47.4c; Sept., 44.5c per bushel.

Rye.—This cereal following wheat, No. 2 now being quoted at \$1.14 per bushel. Market is lifeless.

Beans.—Trade rules steady. Detroit quotations are: Cash \$3.10; July \$3.15. Chicago trade is quiet and steady. Pea beans, hand-picked choice, quoted at \$3.18@3.25; common \$3@3.15; red kidneys \$3.25@3.65. At Greenville farmers are getting \$2.80 per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$7.60; seconds \$7.30; straight \$6.90; spring patent \$8.10; rye flour \$6.70.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$25; standard middlings \$29; fine middlings \$32; cracked corn \$33; corn and oat chop \$30 per ton.

Hay.—Quotations steady. Carlots on the track at Detroit are: No. 1 timothy \$18@18.50; standard \$17@17.50; No. 2, \$16@16.50; light mixed \$17@

17.50; No. 1 mixed \$16@16.50; No. 1 clover \$14@14.50.

New York.—Steady. No. 1, \$23.50@24; No. 2, \$21.50@22.

DAIRY AND POULTRY PRODUCTS.

Butter.—Liberal receipts caused a decline of 1c in creamery. Packing stock in good demand and advanced ½c. Extra creamery 27c; firsts 26c; dairy 25½c; packing stock 18½c.

Eggs.—Large receipts caused a decline of 1c. Quotation for the week 27c per pound.

Chicago.—Market is firm. Strictly fancy and under grades are selling well. Little change in prices. Extra creamery 27½c; extra firsts 26½@27c; firsts 25½@26c; seconds 20@21c; packing stock 20@20½c.

Poultry.—Market is well supplied and prices on hens and broilers are lower. Live.—Broilers 25@28c; hens 15@15½c; ducks 17@17½c; geese 10@11c.

Chicago.—Market easy with trading fair. Fowls and springs lower. Fowls, good weights 13c; spring chickens, 2 lbs. and up, 24@25c per lb; 1 lb. to 1½ lbs. 20@22c; small 18c; ducks 13c; young ducks 1½@2 lbs. 15@18c; geese 8@9c; guinea hens \$2.75@3 per dozen.

Eggs.—Supply is decreasing and demand good but prices are unchanged. Fresh stock sells at 18½c per dozen.

Chicago.—The market is ruling firm at prices slightly lower than last week. Anything but fine stock is a little difficult to move. Miscellaneous lost, cases included, 16@17½c; ordinary firsts 16@16½c; firsts 17@17½c.

Veal.—Quoted steady at 11½@12c for fancy, and 10@11c for common.

FRUITS AND VEGETABLES.

Strawberries.—Market is firm and prices good. Cases of 24 qts. sell for \$3.50@3.75.

Chicago.—Michigan berries arrive in good condition although some are soft. Michigan 16-qt. cases are quoted at \$2@2.50, depending on the quality.

Potatoes.—Market firm with prices higher. Quoted at 43@45c per bushel in sacks. At Chicago the market is firm on account of light receipts. Demand is good. Michigan white in bulk are quoted at 45@48c per bushel. At Greenville potatoes are moving freely at 30@35c per bushel.

WOOL.

Boston.—The market continues very firm. Local sales consist largely of foreign wools; even these show strong price tendencies. American growers are firm in their price demands and the trade seems inclined to pay what is being asked. Experience in the substitution of foreign wools for domestic grades has not been altogether satisfactory, which should enable those holding American wools to sell at better advantage. Michigan and Ohio fleeces are high but nevertheless are selling freely. Farmers are getting from 28@30c per pound. Boston prices for Michigan unwashed delaines 26@27c; do. combing 29@34c; do. clothing 24@30c.

GRAND RAPIDS.

Dealers are paying 17@17½c for eggs and 20@21c for dairy butter this week. Poultry is weak, with fowls selling at 13@14c. Only a few home-grown strawberries have arrived and the price paid is around \$2.40 per crate. Frost and dry weather have shortened the crop of early berries. Old potatoes are selling at 40@45c on the city market. Hay is somewhat higher, selling at \$13@15. Grain prices at the mills are as follows: Wheat \$1.21; oats 58c; corn 76c; rye \$1.

DETROIT EASTERN MARKET.

Liberal supplies and a good demand made an excellent market Tuesday morning. Potatoes have advanced, with prices ranging from 60@75c, according to quality. Head lettuce 60@65c; leaf lettuce 30@35c; onions three bunches for 25c; radishes 10 bunches for 25c; beets 15c per bunch; turnips two bunches for 25c; some greenhouse tomatoes were offered at \$2 per 1-5-basket; home-grown strawberries 20c qt; asparagus 70c per dozen bunches; eggs 24@25c; no butter nor hay in sight.

THE LIVE STOCK MARKETS.

Buffalo.

June 7, 1915.

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

Receipts here today as follows: Cattle 150 cars; hogs 125 d. d.; sheep and lambs 13 d. d.; calves 2200 head.

With 150 cars of cattle on sale here today and 18,000 reported in Chicago, our market was dull and draggy from

start to finish and irregularly lower from 10@35c per cwt. The cattle bought here today, that sold for the top price, were better than the cattle that were here last week that sold for 25c more. However, at the close about everything was sold and the market well cleaned up and we think there is no doubt but this will be the low day for quite a while to come, in fact, we expect much lighter receipts and an advance in prices on all dry-fed cattle from this time on.

We had a liberal supply of hogs here today, about 125 double decks, demand was good and all grades sold at steady Saturday's prices. Everything outside of extreme heavies and rough grades sold at 8c per lb; heavies quotable at \$7.75@7.90, as to quality. Our rough market has not been very good of late; choice kinds sold here today at \$6.50. Stags \$5@5.50, with a fancy one occasionally a little more. Market closed about steady and everything sold that arrived in time to fill. Our weather extremely hot here and would advise using caution in loading.

The market was active today on lambs and sheep, with prices steady with the close of last week; most of the choice handy yearling lambs selling at \$10.25. Look for steady prices last of week with moderate receipts.

We quote: Spring lambs \$11@12; cull to fair \$6@10.50; yearling lambs \$10@10.50; bucks \$3.50@4.50; handy ewes \$5.50@5.75; heavy ewes \$4.50@4.75; wethers \$6.50@6.75; cull sheep \$3@4.50; veals, choice to extra \$10.25@10.50; fair to good \$8@10; heavy calves \$5@7. Our advice to shippers is to be careful on calves weighing 200 lbs. and over, as they have to be sold about \$1@1.50 per cwt. below the tops.

Chicago.

June 7, 1915.

Cattle. Hogs. Sheep.
Receipts today..16,000 35,000 11,000
Same day 1914..18,253 47,081 12,583
Last week.....36,751 128,704 43,491
Same wk 1914..37,291 117,725 66,153

Shipments from here last week aggregated 8,711 cattle, 10,985 hogs, and 297 sheep, comparing with 16,257 cattle, 17,323 hogs and 2,861 sheep the same week last year. Hogs received last week averaged 229 pounds.

Cattle were steady today while hogs were steady early and 5c lower later. Sales ranged at \$7.10@7.70, with a rumored sale at \$7.75½. Lambs were in poor demand and were reported as 25@50c lower after trade got started.

Cattle advanced sharply on Monday last week, Memorial Day, when only 10,959 head were received, but later in the week the market followed the opposite course, with larger offerings and a restricted general demand. The bulk of the steers sold during the week brought \$8.25@9.10, with sales of the best offerings at \$9@9.50, 17 fancy 1,411-lb. Angus steers bringing \$9.50, while a sale was made of seven head of prime steers from the University of Illinois that averaged 1,136 lbs. at \$9.40. With two exceptions, no car lots sold over \$9.30, and yearlings sold much under choice heavy steers, \$9.20 paying for the best car lots of yearlings. A good class of corn-fed steers brought \$8.65@8.95, while medium grade steers sold at \$8.40@8.60 and common to fair steers of light weight at \$7@8.35, scattering small lots of inferior steers selling down to \$6.75. County shippers continued to send in altogether too many poorly finished yearlings, and sales were made down to \$7.25@8.25 for the poor to fair lots of such cattle, with good lots taken at \$8.50 and upward and choice yearlings salable at \$8.80 and over. Butchering cows and heifers sold freely on the basis of \$5.30@9, while cutters went at \$4.65@5.25, canners at \$3@4.60 and bulls at \$5.15@7.75. Calves

were plentiful, and the better class of light-weight vealers were good sellers at \$9.25@10.25 per 100 lbs., sales being made down to \$5@8 for the heavier lots. On the whole, the cattle market during most of the week was a very uneven one, with buyers discriminating severely against undesirable offerings of steers, cows, heifers and bulls. There were 379 cattle shipped from Chicago on Tuesday to go to France to feed the fighting armies. This was the first shipment of that kind in about three years, although there has been considerable talk of late that the packers were going to send live cattle abroad. Along with these cattle purchased on the Chicago market there were 640 head bought in the east to be loaded on the same boat. If boats are available, it is thought that this business will develop, as beef is getting scarce in Europe.

Hogs were higher at the opening last week, but after quite a number of prime light-weight consignments had brought \$7.90, the market weakened, and on subsequent days large additional declines in prices took place. The receipts exceeded most expectations, and the packers were bearish, the heavy offerings selling to much poorer advantage than the better class of light hogs adapted for the eastern shipping trade. Recent receipts have averaged 231 lbs., comparing with 237 lbs. a year ago and 242 lbs. two years ago. Provisions were in large domestic and foreign demand, but stocks are still excessive. The combined stocks of provisions in the five leading western packing centers the first day of June amounted to 363,088,059 pounds, comparing with 367,292,718 pounds a months earlier and 218,132,589 pounds a year ago. Eastern shippers usually confined their hog purchases to lots weighing from 225 pounds downward. At the week's close hogs sold at \$7.10@7.70, with rumors of a \$7.75 top, while pigs brought \$6.25@7.25. The best heavy hogs sold 15c below the top price.

Sheep and lambs continued to be marketed last week in meager numbers, yet that did not prevent a number of breaks in prices, the depressing argument being the great falling off in the consumption of mutton and lamb due to the advance to practically prohibitory prices in the retail meat markets of the country. Most of the offerings consisted of fed lambs and spring lambs, and they attracted most bad sellers. Aside from moderate offerings of ewes, few sheep were seen in the market. The market was variable, with large advances at times and bad breaks at others. High prices prevailed at the week's close, spring lambs going at \$7.50@11.75 per cwt., while clipped flocks sold as follows: Lambs \$6.50@10.75; wethers \$6.50@6.90; ewes \$4@5.75; bucks \$4.25@5.

Horses were in the accustomed large demand for army purposes, and all suitable offerings sold readily at firm prices, mounts going at \$135@150 and artillery horses at \$175@200. Farm mares brought \$140@235, and a load of farm geldings was got together in the stock yards by an eastern speculator at \$75@115. Expressers brought \$185@215, and a few heavy horses sold up to \$300, while a limited number of pairs sold at \$450@5.

The cattle shortage in this country may be judged from the fact that the receipts of cattle in the six leading western markets for the first half of the present year ran approximately 500,000 head short of the number received in the corresponding period last year. High prices for fat cattle are assured for months to come.

The outlook for hogs is regarded as extremely encouraging by the best authorities, and owners should hold their pigs until well matured hogs.



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Yes, waiting for every farmer or farmer's son — any industrious American who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is higher but her farm land just as cheap and in the provinces of Manitoba, Saskatchewan and Alberta

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THIS IS THE FIRST EDITION.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
June 3, 1915.

Cattle.

Receipts 1636. Market opened at the local stock yards with a nasty cold rain that lasted all day and made the stock yards the most disagreeable place imaginable to do business in. The Pere Marquette had a train of 34 cars that did not get in until after four o'clock Wednesday, too late to sell, but other roads did fairly well with their receipts.

The quality in the cattle division was good and the market opened up about steady, but the trade was a trifle slow and on everything but light dry-fed butchers and prime steers was 10c lower at the close, but everything was sold. Best heavy steers \$8.35@8.75; best handy weight butcher steers \$7.40@8; mixed steers and heifers \$7.35@7.50; handy light butchers \$7@7.25; light butchers \$6@6.75; best cows \$6.25@6.50; butcher cows \$5@6; common cows \$4.25@4.75; canners \$3@4; best heavy bulls \$6.25@6.75; bologna bulls \$5.50@6.

Reason & S. sold Newton B. Co. 4 cows av 1205 at \$6.50; to Hammond, S. & Co. 14 steers av 907 at \$8, 2 do av 675 at \$6; to Kull 4 bulls av 1045 at \$6.25; to Resnick 6 cows av 1036 at \$4.75; to Parker, W. & Co. 3 steers av 1390 at \$8.50; to Gardner 2 cows av 985 at \$5; to Mich. B. Co. 15 steers av 1003 at \$8.25, 3 cows av 980 at \$6.75, 11 do av 1082 at \$6.25, 9 steers av 881 at \$7.85, 1 cow wgh 930 at \$5.50, 1 do wgh 1150 at \$6.50; to Hammond, S. & Co. 6 butchers av 1090 at \$6.25.

Bennett & S. sold Hammond, S. & Co. 8 steers av 949 at \$8.25, 1 do wgh 1010 at \$7.

Walkinhute sold same 10 steers av 795 at \$7.

Robb sold Bresnahan 4 cows and bulls av 1232 at \$6.15, 2 butchers av 965 at \$7.75, 1 bull wgh 860 at \$5.

Roe Com. Co. sold Newton B. Co. 4 steers av 972 at \$7.25, 2 cows av 1100 at \$5.50; to Sullivan P. Co. 2 bulls av 855 at \$5.50, 2 do av 950 at \$6.35.

Veal Calves.

Receipts 871. The veal calf trade was active and quite a number of the best grades brought \$10 a hundred; bulk of sales, however, was at from \$9.50@9.75 for good, and common and mediums \$7@9. The close was steady.

Reason & S. sold Hammond, S. & Co. 6 av 165 at \$9.25, 3 av 170 at \$9.50; to Newton B. Co. 11 av 151 at \$9.50, 4 av 150 at \$9.50, 14 av 160 at \$9.25, 1 wgh 100 at \$6; to Rattkowsky 3 av 140 at \$10.

Haley & M. sold Mich. B. Co. 5 av 150 at \$10, 8 av 150 at \$9.50, 18 av 175 at \$9.50, 14 av 140 at \$9; to Rattkowsky 7 av 325 at \$6; to Newton B. Co. 3 av 200 at \$7; to Rattkowsky 9 av 140 at \$8.50; to Mich. B. Co. 5 av 150 at \$9.50.

Sheep and Lambs.

Receipts 1557. The supply of sheep and lambs was small but plenty large enough to supply the local demand; best lambs were 25@40c lower and common grassy stuff was hard to dispose of at any price. The market on sheep was very bad and fully a dollar lower than they were a week ago. Good heavy sheep could not be sold at the close for \$5 a hundred and a large number had to go over unsold on Wednesday. Wholesalers say they are all filled up and no demand. The retail price must come down materially before they can clean up. Best lambs \$9.50@9.60; fair do \$8.50@9; light to common lambs \$5.50@6.50; grass lambs \$7@8; fair to good sheep \$4.75@5.25; culls and common \$3@4.

Haley & M. sold Newton B. Co. 15 spg lambs av 60 at \$11.50, 3 lambs av 100 at \$8.50, 2 yearlings av 105 at \$6.50; to Costello 27 lambs av 58 at \$7.50; to Ratner 9 sheep av 120 at \$5.50; to Mich. B. Co. 15 sheep av 110 at \$4.50.

Sandel, S., B. & G. sold Mich. B. Co. 21 lambs av 70 at \$7.50, 21 yearlings av 85 at \$6.

Roe Com. Co. sold Sullivan P. Co. 10 sheep av 120 at \$5.50; to Barlage 15 lambs av 80 at \$8.

Reason & S. sold Mich. B. Co. 8 sheep av 125 at \$6, 61 lambs av 58 at \$6.50.

Bishop, B. & H. sold Barlage 12 lambs av 55 at \$7, 22 spg lambs av 50 at \$10.75; to Newton B. Co. 23 spring lambs av 60 at \$11.50; to Sullivan P. Co. 23 sheep av 85 at \$5.50.

Hogs.

Receipts 9575. In the hog department the quality was good but the market opened on Wednesday 10@15c lower than on Tuesday; the bulk of sales were made at \$7.65. On Thursday Buffalo was again lower and the market here at noon was \$7.60.

Friday's Market.

June 4, 1915.

Cattle.

Receipts this week 1937; last week 1391. Best dry-fed steady; grassers 15@25c lower than last week. Best handy weight butcher steers \$7.50@8; mixed steers and heifers \$7.25@8; best grassers \$7.25@7.75; light butchers \$6.50@7.25; best cows \$5.75@6; butcher cows \$5@5.50; common cows \$4@4.50; canners \$3@4; best heavy bulls \$6.25@6.50; bologna bulls \$5.75@6; stock bulls \$5@5.50.

Veal Calves.

Receipts this week 1222; last week 1093; market dull. Best \$9.50; others \$7@9.

Sheep and Lambs.

Receipts this week 1984; last week 2246; market dull. Best lambs \$9.50; fair do. \$8@9; light to common do. \$5.50@6.50; grass lambs \$7@8; fair to good sheep \$4.75@5; culls and common \$3@4.

Hogs.

Receipts this week 13,883; last week 9,719; market 5c higher; all grades \$7.65.

Veterinary.

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

Pleuro-pneumonia.—Last March my horse had pleuro-pneumonia, has been treated ever since he took sick, by our local Vet., but whenever he turns around he groans and two weeks ago he grew worse and Vet. blistered his sides. B. T. G., Chilson, Mich.—I fully believe you had better follow the advice of your Vet., who is in close touch with this case and is no doubt doing all that can be done for him. As soon as the weather will permit, turn him out, leaving him out day and night; but, of course, shelter him during storms.

Chronic Cough.—I have a five-year-old mare in apparently good health but occasionally coughs. I feed her mixed hay and oats. H. F., Freeland, Mich.—Mix 1 oz. of guaiacol in 15 ozs. of raw linseed oil and give her 1 oz. at a dose three times a day.

Depraved Appetite.—I would like to know what ails my cows; some of them will chew for hours on stones and gravel. I also have another cow that has a bunch close to milk vein on side of center under abdomen. C. S., Deerfield, Mich.—Mix together equal parts bicarbonate soda, ginger, gentian and salt, and give each cow a tablespoonful or two at a dose in feed twice a day. Apply one part iodine and nine parts fresh lard to bunch every two days.

Joint Lameness.—Have mare eight years old that is either lame in fetlock or hock joint of left hind leg. She went wrong about two months ago and I might add if she stands a few minutes after a drive, she starts very lame. M. B., Roscommon, Mich.—I am most inclined to believe the lameness in is hock joint. Give her a rest and apply one part powdered cantharides and four parts lard every ten days.

Scurvy.—Some of my hogs are troubled with a scurvy and scaling of skin around ears and neck, but do not appear to be sick. These pigs are about four months old and for the past seven weeks, their skin has been scaly. C. C., Saranac, Mich.—Apply one part oxide of zinc and four parts vaseline once a day.

Hard Milker.—I have a cow that is a very hard milker and would like to know what can be done to make milking easier. L. E. C., Mt. Pleasant, Mich.—Dilating teat canal with a smooth, dull-pointed tapering steel probe will have a good effect; however, a tough milker is usually always so.

Growth on Eye.—I have a cow with growth on inside corner of eye, which I have had cut out only to grow and come back again. I could burn it out with nitrate of silver again, but seem to always grow. M. L. D., Colesburg, Mich.—Either cut out growth with a knife or have it cut out, then apply boracic acid.

Heifer Fails to Come in Heat.—I have a two-year-old heifer that freshened in February but has not been in heat since. A. R., Oshtemo, Mich.—Give your heifer 30 grs. of ground nuxvomica, 2 drs. powdered capsicum and 1/2 oz. of sweet spirits of nitre at a dose in a quart of water as a drench or in feed twice a day.

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110 REGISTERED HOLSTEINS 110

SALE PAVILLION, JUNE 17, 1915

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Cows and heifers in calf to sons of Pontiac Korndyke, the world's greatest sire; King Segis Pontiac, sire of the \$50,000 bull; Colantha Johanna Lad, sire of three daughters holding world's records; Pontiac Appolo, sire of Pontiac De Nijlander, the thrice 30-lb. wonder; Princess Hengerveld De Kol, 33.6 lbs., the best daughter of Hengerveld De Kol; Mabel Segis Korndyke, 40.36 lbs., the world's record Junior four-year-old.

A son of King Segis Champion Mobel, the only bull whose dam has a 40-lb., Jr., 4-year-old record. An opportunity to purchase a herd sire of world's record breeding at your own price.

Everything over 6 months of age Tuberculin-tested.

Remember the time and place. Sale starts at 10:30 Thursday, June 17th, at the new Sale Pavillion at Howell, Mich.

PERRY and MACK, Auctioneers. S. T. WOOD, Sale Manager

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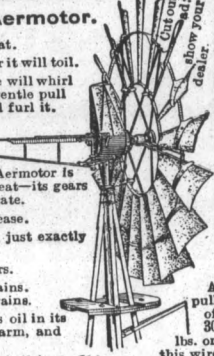
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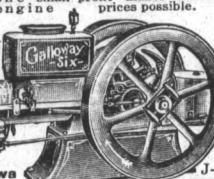
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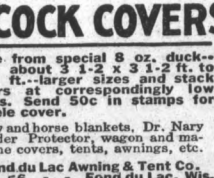
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Farm Commerce.

Grape Men Tussle with Selling Problem

By HALE TENNANT,

Secretary of The American Grape Growers' League and a Grape Grower of Berrien County, Mich.

THE grape industry of Michigan lends itself to organization very readily on account of its restricted geographical limits—the whole belt being located in two adjacent counties and on account of the uniformity of the product—90 per cent of the acreage being Concord.

Organization Started Some Years Ago.

The Van Buren county district has been for some time under association lines, that is, local brokers and speculators have been eliminated. There are four independent organizations in this district. The Berrien county district markets about 50 per cent of its crop co-operatively; the balance being distributed by brokers and speculators. The marked difference in the progress made in organization in the two districts is due largely to the fact that Berrien county has large horticultural interests other than grapes, small fruit, peaches, melons, pears and apples being grown extensively, so that in the majority of cases grapes are only a side issue, and the average acreage is small. This condition tends to prevent concentration of the grower's attention to grape market problems. The contrary is true in Van Buren where grapes are the principal crop and the individual acreage is large. Another reason for the lack of progress in Berrien county is that all fruits except grapes are either sold on the local markets or unconsigned. From strawberries to winter apples local buyers are very active and these agencies are in a favorable position to harass and compete strongly with co-operative organizations.

Local Initiative Destroyed.

An examination of the organization in the Michigan belt reveals an error into which practically all have fallen and which has proven a constant source of weakness. It consists of overlooking the importance of local and individual initiative. The associations were usually formed at a certain center including a limited area in which the growers were well known to each other. From this point they spread out, including other stations farther and farther away, until a large extent of territory was included in which many of the growers were entirely unknown to each other. Now these stations are all pooled together so that a farmer in one station is obliged to pool his interests with another unknown farmer whose farm or fruit he may never have seen. This proceeding kills local pride and initiative. Prof. Bailey has made this point very clear and his conclusions have never been questioned. He maintains that the vitality of the country must always depend upon local and individual initiative and any institution organization that overlooks this principal is fundamentally wrong.

Build up the Local Units.

The attempt to unite a large territory into one organization such as our present pooling systems indicate, must have a leveling effect that destroys local pride and interest to the end that the organizations are looked upon as a more or less foreign institution. The remedy lies in strengthening the local units.

These rural communities which correspond in grape organizations closely to loading stations, should each have their own organization and take care of all matters that are of a local nature. The larger interest must necessarily be delegated to a central organization with which these local units should be federated.

Make Assets of Local Peculiarities.

The fruit in one station may, on account of soil or elevation, ripen earlier, another station with heavier soil may not be prime until much later. In one locality certain varieties may predominate and in another superior packing may prevail. These differences ought to be emphasized by establishing a local brand or otherwise made assets by individualizing the local product.

Objects to Paying Commissions.

Certain other administrative policies of some of the organizations are open to criticism. The practices of paying salesmen commission and allowing managers to furnish supplies independent of the organization are especially objectionable.

The organizations are led to adopt these methods in seeking to avoid complicated executive problems and financial responsibility. For instance, paying a commission instead of a salary relieves the organization from establishing a sinking fund or making other arrangements to pay salaries on years of low yields. The commission must be sufficiently high so that in making up for years of low yields, the commission amounts to rather large sums in years of good crops. This gives the impression that the salesmen are getting more compensation than their earning capacity would justify and usually creates much dissatisfaction. The most formidable criticism of the commission plan, is that it sets up an interest which may very easily become opposed to the interest of the grower. While these salesmen may be honest and conscientious they are also human and may be expected to protect what they consider their own interest.

Better to Organize on Strictly Co-operative Basis.

The handling of supplies independent of the organizations may be disapproved for similar reasons. These practices are further objectionable as building up a possible barrier to future progress along association lines, it being very evident that well established interests would oppose any innovation that might disturb those interests.

Co-operative organizations ought to be formulated on a broad constructive basis and all employees or agents should be directly responsible to the grower and no interest or activity should be allowed to interfere with that responsibility. Attention is here directed to the better organizations and absolutely no criticism is aimed at the personnel of their management.

Federation of Local Societies Necessary.

In the progress of co-operative organizations, farmers soon find that a single independent association, controlling a relatively small output, has only a limited usefulness. While it may attack all the problems better than the individual farmer, it has neither capital nor resources sufficient to develop a comprehensive marketing system. All the problems affecting the industry in a larger way being entirely beyond its reach. It finds itself practically at the mercy of outside buyers who stimulate the cut-throat competition which normally arises between local associations and speculators.

The "Arbiter" System.

The first successful effort in uniting local organizations took place in Van Buren county and consisted of the so-called "arbiter" system, the purpose

of which was to overcome undue competition. It was a very modest step and consisted in reporting sales and cars on track to an arbiter with an agreement not to cut prices without notice to the arbiter, who in turn notified the other units. The extension of this arbiter system to Berrien county was about the only accomplishment of last year's effort in the direction of federation. The arrangement worked out very well last season and although it was in some respects a gentlemen's agreement, there were no complaints about violation of the requirement. It, no doubt, did considerable good in the way of stabilizing the market. It was especially beneficial in showing up the weakness of the present system in which each association has its own independent selling arrangements.

Centralized Control.

Although each association may do its best to maintain the market, it is apparent that all are at the mercy, more or less, of the weakest agency and when one is forced to lower quotations, the other must follow. Some opposition to the arrangement may be expected on account of the consequent embarrassment to those agencies which are compelled to lead in price cutting. Friendly relations and a common interest, however, are sure to be of much benefit to the whole belt, especially in showing clearly the interdependence of the local organizations and necessity for more centralized control.

It is the firm conviction of the writer that the great need of the grape belt is more efficient organization and that this increased efficiency must come from two movements, seemingly in opposite directions. One looking to the strengthening and building up of local initiative, the other the federation of those local units into one powerful central organization.

LIVE STOCK MARKET NEWS.

The cleaning up of the country from the foot-and-mouth disease will be followed by a marked improvement in the live stock business, and stockmen will be extremely glad to be able to carry on business once more without restrictions.

The main element of strength in the Chicago hog market recently has been the desire of the big packers to prevent a bad break in prices for provisions, for they are liberal holders of lard and cured meats, supplies of which are unusually heavy in Chicago and other western packing centers. Obviously, placing the hog market on a much lower basis would be quickly reflected in a corresponding decline in prices for products. Some time ago determined efforts were made by the packers to lower the uncomfortable accumulations of lard in American markets by storing a good share of the lard in European markets, and now these big supplies are depressing foreign lard markets. Enormous quantities of provisions have been exported to Europe, and the French government has been a heavy purchaser of fatbacks.

It is the universal belief that extremely high prices for fat cattle are assured for the summer period and that even a medium grade of cattle will sell relatively high, but owners who market thin cattle will act against their own interests. The serious shortage of cattle in feeding districts is nowhere denied, and it is an unfortunate fact that most stockmen who are anxious to restock their pastures are unable to secure young stock cattle at reasonable prices, while many owners refuse to sell on any terms. This has resulted in exorbitant and dangerously high prices, and within a short time thin yearling stock steers have brought \$8.50@8.75 per 100 lbs. in the Kansas City stock yards, while at the same time sales were made of choice beef cattle as low as \$8.25. Usually, a good many cattle are fed at distilleries and large numbers are marketed during the months of June and July, but at the present time comparatively few are being fattened. All marketable cattle are bringing extremely high prices, and even the weighty class of steers have moved up, although the extremely heavy class go at a marked discount, with killers paying a good premium for prime yearling steers and heifers.

Grange.

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

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
Overseer—C. H. Bramble, Tecumseh.
Lecturer—Dora H. Stockman, Lansing.
Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. M. Taylor, Shelby.

THE GRANGE IN COMMUNITY SERVICE.

It is not my purpose to write an essay upon this subject but simply to tell the story of two or three Granges in Delta county in relation to what they have done for their respective neighborhoods.

Nine miles southwest of the village of Garden, is Fayette post office. Thither went John F. Wilde, of Ottawa county, six years ago, to organize a Grange. No ordinary obstacle could stop John Wilde when he had gotten on the trail to a possible future Grange. He put over 60 of them into the upper peninsula that year, and would have been going yet, if Michigan had only been large enough.

Fayette Grange is not very large, from the standpoint of numbers, but it is doing good work. The present secretary, Bro. Peterson, is doing splendid work. He is keeping the books in perfect order, insisting upon prompt payment of dues, and hustling for the patronage of Grange contracts. Through his efforts Fayette Grange is using these contract privileges far more than the average Grange in this section, and the use of them will prove of much benefit to the community. Mr. Peterson is a pioneer in the community and is doing what he can to help make it a good place in which to live.

A factor in Fayette Grange that must not be overlooked, is Sister McGregor. She has shown in a marvelous way, what one determined woman can do when she makes up her mind as to the right way to proceed. Her Grange activities began with the duties of lecturer of the Delta County Pomona. In this work she traveled hundreds of miles, as Fayette is remote from the other points where the Pomona held its meetings. She was obliged to give up this work, but has been very active at home.

She plays the organ, helps in the singing, plans for programs, and is always on hand to encourage everyone to work in the best possible way. She secured Dr. Henderson, of Ann Arbor, to lecture to the people of Fayette on one occasion, and is the local manager of the farmers' institutes in the neighborhood. Through her the Grange has brought the institute to the community, and no speaker has ever visited one of these meetings while she is at the front, without feeling his obligations to her for the splendid way in which she has assisted in this good work.

A few miles to the south is Fairport Grange. Its members are practically all fishermen. Each morning finds them on the lake if the ice is not too plentiful. They clean their fish in the afternoon, and in the summer attend to their little farms and gardens. They are a clean, sturdy, honest and progressive community. The Grange is their social center, and they are loyal to the organization. Next year they should be given a farmers' institute, for they are going to make their farms pay in the near future.

(To be continued).

Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

FARMERS' CLUBS IN MINNESOTA.

From time to time mention has been made in this department of Farmers' Club work in other states. Notable among the states which have forged ahead in this work is Minnesota, where the promotion of Club organization has been made a part of the extension work of the agricultural colleges. So pronounced has been the success of Club work in Minnesota that we believe many farm communities in Michigan, the pioneer state in Farmers' Club work, would be inspired by reading of the success of the movement in that state. For this reason we will quote in this and one or two future issues, from Minnesota's extension bulletin No. 36, which is devoted to an account of the progress of the Farmers' Club movement in that state:

The Farmers' Club is fully meeting the expectations and hopes of those who have been supporting it. No one knows just where or by whom the first Clubs were organized, but their value to the rural communities is so pronounced and so much appreciated by the farmers that no one who is familiar with them can doubt their value. At present there are over 800 Farmers' Clubs that are active in the state.

The Farmers' Club movement has been well received everywhere and has made a steady growth. The Club organization seemed to provide in a peculiar way just what had long been lacking. It brought the people together. They became acquainted and soon began to realize that their interests were mutual. This knowledge inspired confidence and a desire to work together. A combination of their efforts in co-operation, naturally following, has produced beneficial results in numerous ways. While the social and educational advantages have been great, the financial gains have been no less pronounced. One Farmers' Club has adopted this significant motto: "Join the Farmers' Club, get acquainted with your neighbor, you might like him."

Bulletin No. 1, issued January, 1910, by the Agricultural Extension Division, was devoted entirely to Farmers' Clubs. At that time about 90 Clubs were active in the state. The object of the bulletin was to give information concerning the organization of these Clubs, their value, and methods of work, as well as to stimulate interest in them.

In 1913, because of the interest manifested and because Bulletin No. 1 was out of print, another bulletin, Agricultural Extension Bulletin No. 46, was issued. Farmers' Institute Annual No. 26, devoted to co-operation, contained a reprint of this bulletin that its information might have wider publicity.

In the fall of 1913, instead of holding regular farmers' institutes the workers were sent into the country, in response to requests, to address Farmers' Clubs and to work among the farmers on their farms. This new departure not only proved popular but was extremely valuable. So many requests for speakers were received that it was impossible to supply them. This year the work has been continued but without any effort to promote it. Interest in this method of taking information directly to the farmers is unabated, and it is hoped that arrangements may be made to fully meet the demand.

(To be continued).



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Pocket Knife, 2 blades

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A KNIFE that is sharp today and dull tomorrow is likely to have more dull days than keen ones. The quality that goes into Keen Cutter pocket-knife blades makes them hold their edges without frequent recourse to the sharpening stone. They are the kind of knives that it is a pleasure to own and use. Uniform quality, but many styles. Prices vary only according to handles and number of blades.

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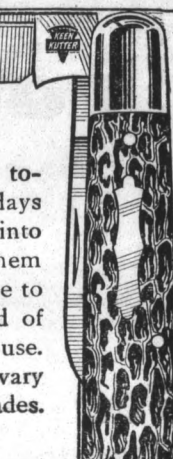
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Keen Cutter Junior Safety Razor, with extra package of blades and case

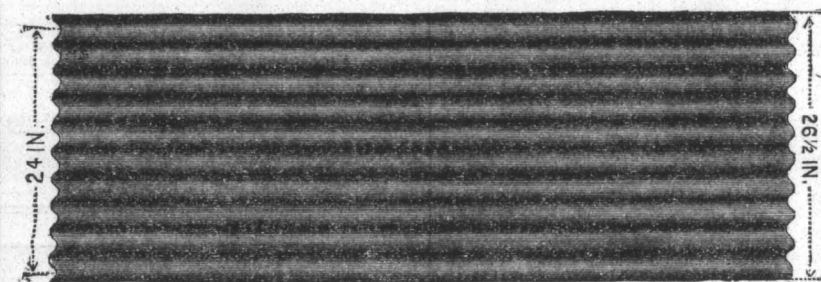


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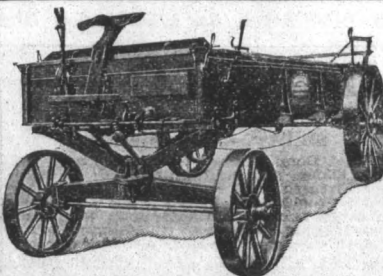


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ROSE COMB BROWN LEGHORN EGGS from Mad. Sq. winners. \$1.00 per setting, \$5.00 per 100. M. Pekin ducks \$1.00 per setting. CLAUDIA BETTS, Hillsdale, Michigan.

S. C. White Leghorns: Bred to Lay. Barron 15 postpaid. \$4 per 100, not prepaid. Breeding hens for sale after June 1st. Bruce W. Brown, R. No. 3, Mayville, Mich.

White P. Rocks. Pekin and white runner ducks. White guineas, eggs and day old ducks and chicks. H. V. HOSTETLER, St. Johns, Michigan.

WHITTAKER'S ROSE COMB REDS. Eggs and Chicks. Write for Mating List and The Whittaker Guarantee. Interlakes Farm, Box 39, Lawrence, Mich.

SILVER Laced Golden and White Wyandotte Eggs for hatching. Ten cents each, or \$2.50 for 25. I pay parcel post charges. C. W. BROWNING, Portland, Michigan.

BARRED ROCKS. Parks 200-Egg strain. A strain B with Egg records to 271 eggs a year. \$1.50 per 1. Delivered by Parcel Post. Fred Astling, Constantine, Mich.

Buff Rocks. 3 out of 4 firsts Chicago, 1914. Eggs bal. of season \$1.50-15; \$6-100. S. C. Buff Leghorn eggs \$1-15; \$5-100. Pen of 12 Buff Leghorns \$10. 20 Buff Rock Hens. 75 cents to \$2.50, including Chicago and Minneapolis first prize winners. Bird Lawn Farm, Lawrence, Mich.

Chicks: We ship thousands, different Varieties, prices right, order now for spring delivery, free booklet. Freeport Hatchery, Box 12, Freeport, Mich.

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BARRED PLY. ROCKS First prize winners at Chicago, Cincinnati, Indianapolis, etc. Eggs from fine Utility Matings that are bred to lay, \$1.50 per 15, \$4 per 50, \$1 per 100. From best exhibition pens \$10 per 15, \$25 per 50. Prompt delivery and good hatch guaranteed. G. Earl Hoover, R. 7, Matthews, Ind.

White Leghorns Day-Old-Chicks. We guarantee satisfaction to all our customers. MAPLE CITY POULTRY PLANT, Box C, Charlotte, Michigan.

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Barred Rock Hens \$1.50 each, eggs with the kick in them 15 for \$1.25, 100 \$6, baby chicks 100 \$15. W. C. COFFMAN, R. No. 6, Benton Harbor, Mich.

Barred Rock Eggs—Start right with your Barred's with eggs from a pen direct from Bradley Bros. Yards. A. A. Pattullo, Deckerville, Mich.

White Wyandotte Eggs—50c for 15, \$4.00 for 100. My two best pens \$2.00 for 15, \$3.75 for 30. DAVID RAY, 202 Forest Ave., Ypsilanti, Mich.

Half Price from Now On Eggs from some of the best Barred and White Rocks in Michigan. \$1.50 per 15. Heavy laying strains. Riverview Poultry Farm, Box 798, Union City, Mich.

BUFF Leghorns—Great layers from prize winners. Madison Sq. Garden Eggs \$1.50 per 15; \$6 per 100. Day old chicks. Dr. William A. Smith, Petersburg, Mich.

Orpingtons—S. C. White Kellerstrass. Special prices. Eggs, Chix. Fine grown stock for your new flock. M. E. THOMPSON, Redford, Michigan.

WHITE WYANDOTTE EGGS HALF PRICE NOW HOWARD GRANT, Marshall, Michigan.

RINGLET BARRED ROCKS—the winning and laying strain. Eggs \$1.50 per 15, from mated pens also M. B. Turkey eggs from choice birds, \$2.50 per 10. (Charges prepaid by parcel post.) PLAINVIEW STOCK FARM, Romeo, Michigan

S. C. White Leghorns. Farm raised, heavy laying White and Brown Leghorns, \$9 per 100. Bred to lay, large white eggs. Safe arrival guaranteed. Catalogue free. WOLVERINE HATCHERY, Box 2221, Zeeland, Mich.

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RHODE ISLAND REDS and PLYMOUTH ROCKS. Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 9½ lbs., eggs 15 for \$1.00; P. R. eggs \$5 per 100. Mammoth Bronze Tom Turkeys, 8 to 38 lbs. according to age \$8 to \$25, 10 eggs \$3. A. E. Crampton, Vassar, Mich.

BARRED Rock eggs from Barred Rocks that are barred to the skin, also eggs from S. S. Hamburgs, R. C. White Leghorns, White Runner Ducks, White Holland Turkeys. Circular free. Riverview Farm, R. 8, Vassar, Mich.

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DAY OLD CHICKS from bred to lay Ringlet Barred Rocks and S. C. White Leghorn. s. Leghorn chicks \$9 per 100. Rock chicks \$10 per 100. 2 and 3 month old pullets for sale. RUSSELL POULTRY RANCH, Petersburg, Michigan.

DOGS.

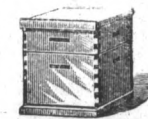
Trained Running Fox Hounds—30 Fox and Coon hound pups, Ponies. Send stamp. W. E. LECKY, Holmesville, Ohio.

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with "FUMOTH" FUMIGATORS is a new, easy and quick way. No more spraying and exposing oneself to these mites. One to two required for a 10 or 12 foot house; one fumigation cleans them all out. Requires only a half hour to do the fumigation and it is play—not work. The fumes go into all the cracks and crevices in your house and permeate the straw, killing every insect, which is not possible with spraying. No after odor remains—can return fowls immediately afterward. Fumes kill instantly and not by suffocation like sulphur or formaldehyde and not dangerous to man. Used and endorsed by Jacob Bauman, Detroit, Pres. Mich. State Poultry Assn. and other prominent poultrymen. 2 for 25c, 5 for 50c, 12 for \$1.00, postpaid. Ask for descriptive folder. Send name of supply house. Guaranteed—money refunded. Also kill Mosquitoes and House Moths. F. A. Thompson & Co., 527 Trembley Ave., Detroit, Mich.

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BINDER TWINE 7½ lb. Fully guaranteed. Farmer agents wanted. Samples and catalog free. Theo Burt & Sons, Melrose, Ohio.

Poultry and Bees.

BEE-KEEPING FOR THE GENERAL FARMER.

(Continued from last week.)

The main problem is to get the bees in the right condition for the honey flows, that is to have the hives very full of bees. In connection with this is the fact that when we get colonies that way they are very liable to defeat our object by again dividing into smaller colonies by swarming.

Swarming is one of the problems that the bee-keeper has to control. This can be done much more easily if we understand why it is that bees swarm. Usually a colony swarms because of one of the following conditions: Lack of room, lack of shade and ventilation, or sometimes when superseding an old queen.

Various colonies will regard the rules quite differently according to strain and other conditions. Where one colony would swarm for lack of room, another colony of same size would consider the same amount of room sufficient, so one has to judge the individual colony rather than to treat all colonies by rule of thumb. For the man who has not a great deal of time to spend with the bees, the following plan should give satisfaction: In May, fruit bloom is good, or directly the colonies get strong

all such frames are placed in one brood chamber, containing most of the brood and the queen and some brood in the other brood chamber or hive body. Remove this latter hive body containing the queen, to its new location and you have completed the first step. Next day many of the bees will leave the hive containing the queen and return to their old location, so do not forget that it is this hive, the one containing queen cells, that will yield you your largest crop of honey. Have your supers ready and when you divide the colony give the one on the old stand one or two supers according to its strength and the season.

(Continued next week.)

THE RED MITE.

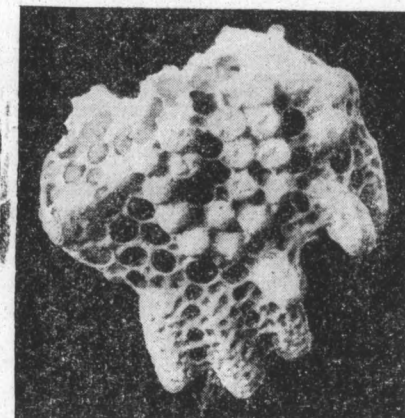
There is no poultry parasite that our feathered friends are less powerless to combat than the common red mite. The body lice can be kept in check by the hen if she has her liberty, because she will frequently find a good dusting place and proceed to cleanse herself and make things very uncomfortable for the lice. But on account of her attachment to her home, no matter how poor it is, she will go back every night to infested roosts and allow the mites to crawl upon her and suck her life blood. Poor biddy is powerless to protect herself and unless friend man steps in and does something for her she soon becomes emaciated and dejected, and egg laying is entirely out of the question. The red mite is one of the most common causes of no eggs when there ought to be some eggs.

Cleanliness in the coop is an important factor in the control of the mite as it will hide under filth, droppings and litter, as well as in cracks and crevices of the roosts and nests. Clean coops, however, are not entirely free from infestation and may even become seriously infested if not given treatment. Spraying is a common means of control, cresol sprays or kerosene emulsion being recommended. On account of being unable to accomplish thorough work by spraying it is necessary to spray frequently in order to keep the mites in check.

Probably the most thorough method of control is by fumigation. The fumes will permeate every part of the coop and kill all the mites, regardless of whether they are in the litter or on the roosts. As all of the mites are killed the treatment will be effective for a long time as it will be some time before the coop will become infested again. The fumigation method is the easiest one to control the mites, all that is necessary is to place the proper amount of fumigant in an open kettle, light it and close the doors tightly. When the doors are opened several hours later the coop is entirely bugless. In order to get good results it is necessary to use a sufficient amount of a good fumigant. The commercial article is the most convenient to used and will assure good results if the direction are followed.

A FINE LOT OF CHICKS.

For several years we have tried every way possible to prevent white diarrhea and bowel trouble in our little chicks, but with very poor success. This year Chictone was so highly recommended to us that we sent to The Wight Co., I-43, Lamoni, Iowa, for a 50-c box and I must say that we now have the finest lot of chicks we ever had. Not a sign of disease and they are growing so fast. I have had to order several boxes since for my neighbors.—Will C. Schultz, Milton Jct., Wisc.—Advertisement.



Queen Cells.

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Aberdeen-Angus Bulls.

We are offering 12 extra good bulls, among them prize-winners at the Michigan State Fair, 1914. Some of them by Black Monarch 3rd, Grand Champion Bull of the State 1914. Others by the Great Sir Blackbird, sire of prize-winners, ages from 9 to 20 months old. Prices from \$100 to \$250 each. Come and look them over; they will please you. U. L. Clark, Hunters Creek, Mich. Sidney Smith, Manager.

ABERDEEN-ANGUS

HERD ESTABLISHED IN 1900. TROJAN-E-LIGAS and BLACKBIRDS only. A few young bulls and cows for sale. Also breeders of Percheron, Hackney and Saddle Horses. WOODCOTE STOCK FARM, Ionia, Mich.

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

Four Registered Aberdeen Angus Bulls, from ten to seventeen months old. Prices reasonable. GEO. HATHAWAY & SON, Ovid, Michigan.

"WANTED" Best Aberdeen Angus Bull that one hundred dollars will buy. Give age, weight and send copy of pedigree. Carl Bartlett, Lawton, Mich.

THE VILLAGE FARM,

Grass Lake, Michigan,

GUERNSEY CATTLE.

MILO D. CAMPBELL CHAS. J. ANGEVINE

BEACH FARM GUERNSEYS

Combine the blood of the following great producing sires and dams:

Masher Sequel	57 A. R. Daughters
Galaxy's Sequel	37 A. R. "
Glenwood Boy of Haddon	21 A. R. "
May Rose King	21 A. R. "
Dairymaid of Pinehurst	910 lbs. fat
Dolly Bloom	836 "
Imp. Itchen Daisy	714 "
Selma of Pinehurst	762 "
Stanford's Princess	725 "

Bulls for sale only.

A Dairy Show Every Day.

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Purebred Guernseys, 2-year-old bull from A. R. stock, good individual, not registered, 1200 lbs. Beef price. Also registered females and bred heifers. G. A. Wigent, Watervliet, Mich.

For Sale—Registered GUERNSEY COWS, HEIFERS AND BULLS of choice breeding. H. W. WIGMAN, Lansing, Mich.

REGISTERED GUERNSEY BULL CALVES for sale cheap at Windermere Farm, Watervliet, Mich. May Rose breeding. Address, J. K. BLANCHARD, Auditorium Tower, Chicago, Ill.

REGISTERED GUERNSEY BULL, 5 years old, for sale cheap on account of inbreeding. He is sure and gentle. JOHN EBELS, R. 10, Holland, Mich.

GUERNSEYS—REGISTERED BULL CALVES Containing blood of world champions. HICKS' GUERNSEY FARM, Saginaw, W. S., Mich.

GUERNSEYS—Write for prices and particulars. 2 bulls 1 year old. Several bull calves, all from A. R. cows and cows on test. Geo. N. Crawford, Holton, Mich.

HEREFORD; Three bull calves and one two year old. ALLEN BROS., Paw Paw, Michigan.

Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6% fat daughter of Pontiac Argle Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

ESPANORE FARM, LANSING, MICHIGAN.

Home of the great Holstein Bull "PLEDGE SPORFORD CALAMITY F.U." with 33 A. R. O. daughters including a 5-year-old with a 35-pound record. Others from 20 to 32 pounds.

FOR SALE—A Bull Calf sired by this Great Bull.

CHAS. S. OSBORN, ADAM E. FERGUSON, Owners.

HOLSTEINS FOR SALE

- 5 Good Bulls, ready for service.
- 10 Very Choice Bull Calves.
- 2 Two-year-old Heifers, bred.
- 1 Six-year-old grand-daughter of King Segis, due in December.

L. E. CONNELL, Fayette, Ohio.

Bigelow's Holstein Farms

Breedsville, Michigan.

Highest Class Registered Stock For Sale.

FOR SALE—2 Registered Holstein heifers and one bull 6 months old for \$500, delivered. Bull sired by Hartor Clothilde Lad, 104872, whose four nearest dams' records average over 32 lbs. Pine Hill Farm, R. 6, Lakeview, Mich.

Bull Calf—3 sisters from 30.08 to 34.31 lbs. Sire's sire brother to Pontiac Korndyke. Dam 22.92 lb. her dam has 2 30-lb. sisters. M. L. McLAULIN, Redford, Mich.

Registered Holsteins. The calf is sold to a satisfied customer. Nothing more to offer at present. W. R. READER, Howell, Mich.

"Top-Notch" Holsteins. Extra large fine young bull, 1/2 white, born Oct. 4, 1913. Dam has official record of 29.40 lbs. butter in 7 days, 117.50 lbs. in 30 days. Sire's dam is a 22.64 lb. 4 yr.-old daughter of a 30.59 lb. cow. McPHERSON FARMS CO., Howell, Michigan.

Reg. Holstein Bull calves and Herd Bull. Can supply all wants in Reg. Cheeser White swine. Ray B. Parham, Bronson, Mich.

FOR SALE—Holstein Bull ready for service. Mostly black, also bull calf dropped June 5th, mostly black. Price \$25. Both dams are A. R. O. records. Charles I. Cook, Box 433, Fowlerville, Mich.

300 DUROC JERSEY SPRING PIGS

Bred from Prize Winning Stock of Best Blood Lines.

Save Money and Express by Buying 2 to 4 Months Old Pigs NOW!

SPECIAL PRICES ON PAIRS and TRIOS

This is an opportunity to buy from a herd where time, money and intelligent effort has not been spared to make the

BROOKWATER BRAND OF DUROCS LEAD

Durocs of all ages for sale. Come or write for particulars.

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Brookwater Farm, R. 7, Ann Arbor, Michigan.

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good A. R. O. breeding and plenty of 30-lb. blood in their pedigrees. Dewey C. Pierson, Hadley, Mich.

HOBART W. FAY Registered Holstein-Friesian Cattle MASON, MICHIGAN. Ten years a breeder.

\$40.00 DELIVERED

Handsome Holstein 3 months bull. Registered, with all papers. Elegantly bred. 1/2 white. ROUGEMONT FARMS, Detroit, Michigan.

High Class HOLSTEINS My herd is headed by Smithdale Alcatraz Pontiac, whose dam is the famous Alcatraz Polkadot. Have few young bulls and females for sale at reasonable prices. Will buy a few heifers about 15 months, not bred, Farm 1/2 mile from court house. SETH B. RUBERT, Howell, Mich.

A Great Opportunity—A \$300 HOLSTEIN calf ready for service, and bull calves, also females. HILCREST FARM, Kalamazoo, Michigan.

FOR SALE Registered Holstein Bulls ready for service, and bull calves, also females. FREEMAN J. FISHBEEK, Howell, Michigan.

HOLSTEIN BULL CALVES—Don't buy until you write us. No better breeding in Michigan. Long Beach Farm, Augusta, Kalamazoo Co., Mich.

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

REG. HOLSTEIN BULL, yearling. Dam an A. R. O. cow. Sire a dam made 30 lbs. butter in 7 days. Send card for price, etc. E. R. CORNELL, Howell, Michigan.

\$350 buys two yearling Holstein Heifers 1/2 white and one bull, not akin, all registered. Choice breeding. B. B. REAVEY, Akron, Michigan.

MICHIGAN HOME AND TRAINING SCHOOL LAPEER, MICHIGAN Breeder of High Grade Holstein Cattle. Lists and prices upon application.

HOLSTEIN CATTLE and O. I. C. SWINE ELMER E. SMITH, Redford, Michigan.

Holsteins—One herd bull, two nearest dams averaging 25.05 pounds. Five registered yearling Holstein bulls, two cows, bull calves from sire, whose two nearest dams average 34.45 pounds in seven days. Oldest Holstein herd in Indiana. W. C. JACKSON, 719 Rex St., South Bend, Indiana.

JERSEYS FOR SALE

One Bull—Two Cows—One Heifer. All registered. One cow soon to calf. A bargain at \$450 for the bunch.

NIXON FARMS, Brooklyn, Mich.

Maple Lane Register of Merit Jersey Herd. Tuberculin tested by U. S. Government. For sale bull calves and heifer calves from R. of M. dams and grand dams, and Hook Farm Sire. IRVIN FOX, Allegan, Michigan.

THE WILDWOOD JERSEY HERD

Registered Jersey Cattle of Quality. Tuberculin tested. Majesty's Wonder No. 9077 heads the herd. Bull calves for sale, also a two-year-old bull that is right. For prices and description write or come. ALVIN BALDEN, Capac, St. Clair Co., Michigan.

Lillie Farmstead Jersey Cattle. Bull calves from R. of M. Cows, also heifer calves and several bred heifers for sale. Colon C. Lillie, Coopersville, Mich.

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

JERSEYS—THE REGISTER OF MERIT KIND. BROOKWATER FARM, R. No. 7, Ann Arbor, Mich.

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

The Jersey Sets the Pace in the Dairy World. C.

FISHERTON FARM JERSEYS—Some fine Hood Farm Poles' 9th, from Register of Merit dams. FISHERTON FARM, Pontiac, Michigan.

BIDWELL SHORTHORNS

For "Beef and Milk" Registered Bulls, Cows and heifers Scotch-topped roans, reds and whites for sale. Farm at L. S. & M. S. Depot, also D. T. & I. R. Y. BIDWELL STOCK FARM Box B, Tecumseh, Mich.

Shorthorns For Sale—Young bulls sired by Bright-Sultan. Also cows and heifers. W. B. McQUILLAN, Howell or Chilton, Michigan.

MILKING SHORTHORNS—Young bulls sired by a Grand May & Otis bull for sale. DAVIDSON & HALL, Tecumseh, Michigan.

Shorthorn Cattle of both Sex for Sale W. W. KNAPP, Howell, Michigan.

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

Dairy Bred Shorthorns of best Bates Strains. Young bulls 7 months old for sale. Price \$100 each. J. B. HUMMEL, Mason, Mich.

SHORTHORNS—One bull 2 years old, and some young cows, good breeders and all right, all registered. WM. D. McMULLEN, R. No. 9, Adrian, Mich.

HOGS.

Durocs & Victorias—Grand bunch of Gilts due March and April. Comprising the blood of Superba, Defender, Much Col., Orions and others. A few young boars. M. T. STORY, Lowell, Mich.

Berkshire Hogs—Choice gilts bred to farrow in March and April. Also a number of Barred Plymouth Rock Cockerels. Chase's Stock Farm, R. No. 1, Marlette, Mich.

BERKSHIRES Choice spring boars and gilts, stock. ELMHURST STOCK FARM, Almont, Mich.

Royalton Bred Berkshires—No more bred sows. Fine service boars 1 to 3 years old. Young sows and boars born last October. Prices right. D. F. VALENTINE, Supt., Temperance, Mich.

HAMPSHIRE Swine—Breeding stock of all age from most popular strains. Write for breeding. Inspection invited. Floyd Myers, R. 8, Decatur, Ind.

Hampshire Swine, the kind that wears the belt. Spring pigs and two service boars. Prices right. Papers furnished. S. O. MORT, Elsie, Mich.

WEST WINDS HAMPSHIRE SWINE. Booking orders for sow pigs immediate shipment. No males to offer. E. P. Hammond, owner, N. A. Wiser, manager, Pontiac, Mich.

Chester Whites—Gilts bred for Aug. and Sept. farrow. March pigs, either sex. F. W. ALEXANDER, Vassar, Michigan.

Big Type, O. I. C's and Chester White Swine.

400 fall pigs either sex. special prices for the next 30 days, also bred gilts and service males and we are booking orders for spring pig, all our stock is good enough that I will ship C. O. D. and reg. free in the O. I. C. or Chester White Assn. We won more prizes than all other breeders put together, at Ill. and Wis. State Fairs. Write for Show record.

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O. I. C.—Spring boars all sold. We have some fine fall pigs ready to ship. JOHN BERNER & SON, Grand Ledge, Michigan.

O. I. C. Registered Pigs Write for photo and prices. J. CARL JEWETT, Mason, Michigan.

O. I. C's—Sows bred to farrow last of June and July. Prices reasonable. G. P. ANDREWS, Dansville, Michigan.

O. I. C.—Service boars of Sept. farrow, also a few choice gilts bred for May farrow. H. W. MANN, Dansville, Michigan.

O. I. C's—Spring pigs, pairs and trios, not akin, from state fair winners. AVONDALE STOCK FARM, Wayne, Mich.

O. I. C.—25 sows bred for Spring farrow. 75 Fall pigs, large and growthy. Write your wants. GLENWOOD STOCK FARM, Zeeland, Michigan.

O. I. C. Choice Sept. pigs, either sex. Will take orders for March, April and May farrow. ALVIN V. HART, Grass Lake, Mich.

O. I. C's—STRICTLY BIG TYPE

Gilts bred for Sept. farrow and March pigs now ready to ship. Extra good ones at prices that will move them. Pairs not akin. I will be pleased to ship them O. O. D. and record them free in purchaser's name. NEWMAN'S STOCK FARM R. No. 1, Marlette, Mich.

O. I. C. SWINE—Are you on the market for a choice bred sow to farrow the last of Aug. or fore part of Sept? If you are, write me, I have them. A. J. GORDEN, R. No. 2, Dorrr, Michigan.

O. I. C's—Two good boars 12 months old, good spring boars, 1/2 mile west of depot. OTTO B. SCHULZE, Nashville, Michigan.

O. I. C's—Service boars, gilts, sows, spring pigs—none better. Satisfaction guaranteed. A. R. GRAHAM, Flint, Michigan.

O. I. C. Pigs, 8 to 10 Weeks Old \$10. Pairs not akin. Farrow bred to son of Volunteer, 64. Champ, at 1912 International. F. J. Drott, R. No. 1, Monroe, Mich.

Way Brothers Stock Farm. The home of the big bone O. I. C. Hogs. Stock for sale. Registered free. J. R. Way, Pompeii, Mich.

DUROC JERSEYS—A few fall boars and 12 bred gilts for sale. CAREY U. EDMONDS, Hastings, Michigan.

Capitol Herd Duroc Jersey Swine. Established 1888. Young boars and bred sows for sale. I pay the express. J. H. BANGHART, Lansing, Michigan.

DUROC JERSEYS—A few bred gilts, fall males ready for service. S. C. W. Leghorn and Buff Rock eggs for sale. J. McNICOLL, Station A, R. 4, Bay City, Michigan.

HEAVY BONE DUROC JERSEYS FOR SALE. Some extra nice spring pigs ready to ship. M. A. BRAY, Okemos, Ingham Co., Michigan.

Duroc Jerseys. Big boned service boars: gilts for sale. Farrow bred to son of Volunteer, 64. Champ, at 1912 International. F. J. Drott, R. No. 1, Monroe, Mich.

DUROC Jersey bred gilts, bred for Aug. and Sept. farrow from leading blood lines; also a few good boars. Write for circular and prices. W. C. Taylor, Milan, Mich.

Duroc Jerseys: A few choice boars ready for service. Middleton, Idlewild Farm, R. F. D. No. 3, Clayton, Mich.

Duroc Jersey—March pigs either sex, sired by a son of Volunteer, Champion of State Fairs and Chicago Show in 1912. E. B. Morris, Monroe, Mich.

DUROC JERSEYS—Fall and spring pigs, either sex, from choice strains. S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.

POLAND CHINAS—The type that wins, weighs, and pays—big with quality. Bred sows and pigs either sex. African genes. SPRING BROOK FARM, Three Oaks, Michigan.

GOLD POLANDS as far south as Miss. north and west as far as Washington. Every customer satisfied. I can satisfy you. Breeding stock for sale at all times. FRANK KRUGER, Bayenna, Michigan.

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

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

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Starting May 1st, we are going to give to the farmers and breeders an opportunity to get started right in the breeding industry. We are going to give you a chance to get hold of foundation stock that will give you a nucleus for one of the finest and best herds in your community. We are going to show you as we have others, that you will have greater success with our big type

POLAND CHINAS than with any other breed. We want to place 'at least one pig, or a pair in every community. To advertise our herd. If interested, write for our plan and prices. HILCREST FARM, Kalamazoo, Mich.

LONG Bodied Heavy Boned Poland China yearling, and fall boars at Bargains. B. P. Rock Eggs \$1 per 15. ROBERT NEVE, Pierson, Michigan.

BIG TYPE P. C.—Two boars old enough for service. Sired by Big Smooth Jumbo. Pigs either sex sired by Hoosier Giant 2nd. J. E. Braithwaite, Brant, Mich.

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

POLAND CHINAS of the big type. Boars ready for service. Sows bred for spring farrow. A. A. Wood & Son, Saline, Mich.

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Big Boned Poland Chinas. Fall gilts bred weighing from 280 to 300 lbs. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

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BIG Type boars by Big Smooth Jumbo. Greatest boar in State, 748 lbs at 11 mo. These boars are long, tall, big bone sold at farmers prices, shipped C. O. D. Call or write. Wm. Waffle, Coldwater, Mich.

LARGE TYPE P. C. Largest in Michigan. Bred gilts all sold. A few extra good fall pigs priced to move them quick. W. E. LIVINGSTON, Parma, Mich.

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

YORKSHIRE SWINE. Boars ready for service. A gilt bred for June farrow. Weanling pigs 6-10 weeks old. GEO. S. McMULLEN, Grand Ledge, Mich.

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Lillie Farmstead Yorkshires. Boars ready for service. Gilts bred for Sept. farrow. Spring pigs, pairs and trios, not akin. Colon O. Lillie, Coopersville, Mich.

Registered Yorkshires The World's Bacon Breed. Imported Strain. Both Sexes. Prices Reasonable. Hatch Herd, Ypsilanti, Michigan.

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