

Mr. G. Moore

— OF THE —
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IT is safe to say that during the last few years no other subject has received so much attention nor has been given so much space in the press as the subject of agriculture. Now, you ask, why is this subject being brought so forcefully before the American people? The answer is more simple than the problem—to educate the farmer, and especially the farmer of the future. From the rapid increase of city population as compared to that of the country, as shown by statistics, one can see that no small problem confronts those who are trying to keep agriculture in the front rank in this fast growing country of ours.

To meet and cope with this problem, many plans are being carried out and one of them is the introduction of agriculture in the high schools of Michigan. This year saw several new schools added to the list, and among them was the high school at Bangor, which is a small town of about 1,500 inhabitants, surrounded by some of the finest agricultural land in the state. In fact, in this section of Van Buren county the finest of Michigan apples are grown. This year 40,000 barrels of this fruit was shipped from this town, so one can see that its commercial importance to the country is no small factor.

The farmers of this community are prosperous and, coupled with this prosperity is the desire to learn more about their art, to get new ideas and to help one another in every way that will make their occupation a pleasurable and inviting one. Consequently, this new course which had been added to the curriculum was watched with a keen eye by all interested, but at the same time all were willing to lend a helping hand in making it a success.

To find out just how much interest was being taken and also to discover the quality and quantity of the output of the community the instructor in that subject organized an association known as the Bangor High School Development and Improvement Association, and this organization made arrangements for an agricultural fair. This was the first time

AN AGRICULTURAL AWAKENING.

anything of the kind had ever been attempted in Bangor and it was not without the untiring efforts of this association that the desired results were obtained. The accompanying cut shows those results. It tells the story of what enthusiasm and work will do.

Never did the association dream that such would be the outcome, and when after three hours of work in placing this big display had passed it could hardly be realized that what stood before them was the real article. Placed on tables in the largest room in the school building were 27 different varieties of apples, pears and quinces all cleaned and polished until they looked like wax figures instead of

were interested in live stock, and it had to be placed on the program. Those interested in this were also successful in their work and a fine display of animals was exhibited in a vacant lot near the school house. These horses, cattle and other animals were judged by men from the agricultural college and after this was over everybody retired to the foot ball field for the closing event of the day.

Close to 400 people saw the exhibits of this little fair and all were more than surprised at the showing made. Even fruit growers themselves were somewhat astonished at its quality. They could hardly realize that such fruit was being

to some of the larger fruit shows in the state. Another important factor was the competition, especially in the corn contest. Competition is a good thing for a beginner to meet.

The students elected their own clerks and chose their superintendents, cared for the arrangement of the exhibits and kept account of the awards so that they obtained some insight into business and also learned what responsibility meant. These factors, the writer believes, are what made the fair a success and have helped to pave the way for a much bigger proposition next year.

Van Buren Co.

C. H. CHILSON.

AN AWAKENED COMMUNITY.

On October 16, Watervliet, a village in northern Berrien county, held its second annual street fair and corn contest which was attended by about 6,000 people.

Last year the fair started with the boys' and girls' corn growing contest as a nucleus, the interest in this contest being incited by S. A. Martin, now of Syracuse University, who had charge of the department of agriculture in the high school. To show that the prominent men of the community were interested in this work, it is only necessary to say that they raised \$55 to be used as premiums for exhibits, \$25.00 for the best ten ears exhibited, \$15 for second, \$10 for the third, and \$5 for the fourth best. With this as a starting point enough more money was raised to insure a large exhibit of other farm produce.

The fair created so much interest that ev-

everyone seemed eager to help for this year's fair, with the result that over \$300 was subscribed in the surrounding community in addition to the \$55 for the corn contest, by those anxious to make it a success. No feature of the fair was a money-making scheme, no entry fee was charged nor admission fee. The fair was held in tents put up for the occasion with part of the exhibits in the school house. All available space for exhibits was filled and as to the quality of exhibits, much comment was heard to the

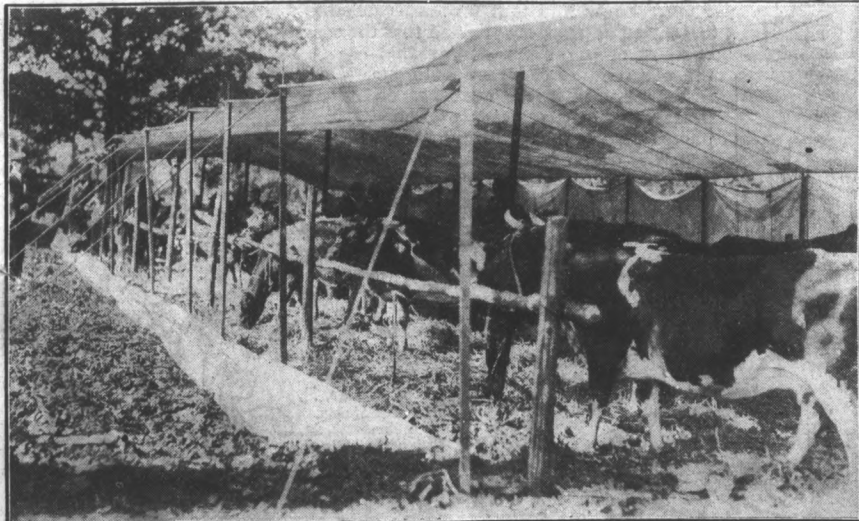


Section of exhibits at an Agricultural Fair Held by Students in Agricultural Dep't of Bangor High School.

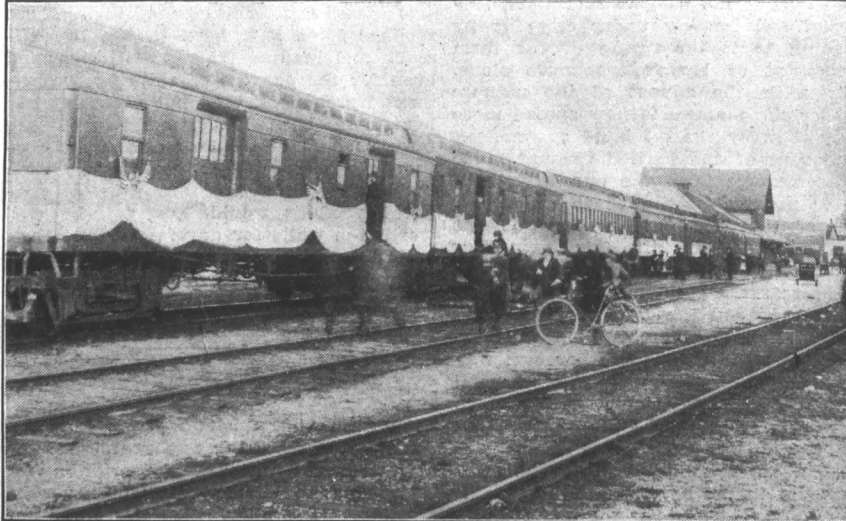
real fruit. In contrast with this beautiful display of the choicest fruits that could be found, stood a long table with 18 exhibits of yellow and white corn, which had been grown by the students themselves from seed corn they had selected and tested the year before. Also arranged on other tables were vegetables of all kinds and sizes. Large pumpkins, squashes, radishes, beets, turnips and other freaks that are sometimes found in the vegetable kingdom. Nor was this all. There were some in the class who

grown right here under their very eyes.

This fair was successful from more than one point of view. It brought the students in closer touch with the conditions that exist in the community. It made them feel the position they occupy in the country's production. A few who did not think it would amount to very much were shown what effort and work will bring forth. This fair even worked up interest among the fruit men to such an extent that three who exhibited fruit at this show at once planned to take it



Live Stock Exhibit at Watervliet Fair; Second Effort of Agricultural Students.



The "Cloverland Special," First Institute Train Run in U. P. (See Page 510).

effect that they would have done justice to a state fair. Especial mention should be made of the fruit and dairy exhibits.

Due to the success of this year's efforts there is much talk of making two days of it another year. Thus we see in this and other like exhibitions throughout the state, a tendency toward renewing the value which the county fairs have produced, eliminating those undesirable features which have been the death of many of our county fairs.

Berrien Co. C. S. LANGDON.

THE "CLOVERLAND" FARM SPECIAL.

The first page illustration, "The Cloverland Farm Special," shows the first College Institute train ever run through the Upper Peninsula. The train was run over the Duluth, South Shore & Atlantic Railway lines during the latter part of October, covering a territory of about 450 miles in 15 days. It was estimated that at least 12,000 Upper Peninsula farmers gathered to hear lectures and see the exhibits carried in the demonstration cars.

Most of the exhibits displayed in the cars were of crops grown in the Upper Peninsula at the State Agricultural Experiment Station at Chatham, or by farmers along the line of the railroad. But perhaps the feature of the exhibits which appealed most to the farmers present was the live stock representative of the different breeds, since the speakers gave the farmers to understand that any farmer might own the same kind of live stock and that it would be an achievement of which any man might feel proud. Of the live stock exhibited, the sheep attracted a great deal of attention especially two individuals which were taken out of a lot of 260 western wethers used to clear 15 acres of brush land at the Upper Peninsula Station. In addition to helping clear this land, the sheep gained enough to make a net profit of \$1.50 per head.

The farmers of this rapidly developing agricultural section of the state exhibited a great eagerness to learn from the experts and instructive exhibits accompanying the train and the after effects are already becoming apparent. More interest is being shown in agricultural literature, including experiment station bulletins and the Michigan Farmer, for which many subscribed during the trip. In addition to securing this aid from the Agricultural College, the Upper Peninsula's business interests are doing much to build up the agriculture of that section, not alone through their development bureau, but through the railroads, some of which, like the one interested in this trip, maintain agricultural departments for this purpose. Altogether this institute train will be productive of great results, since it will doubtless promote many object lessons for better agriculture which, in turn, will prove educational centers for the improvement of the agriculture of the entire section.

CLOVER AND SOIL FERTILITY.

Success in farming depends upon various operations and practices, but the basis of success lies, primarily, with the fertility of the soil. Whatever may be or may have been the soil's virgin condition, or however great its richness, successive cropping, without compensating it by adding an equivalent of what has been removed in crops, must and will eventually bankrupt it. The good farmer if in possession of rich or girvin soil, sees to it that the conditions with which nature has provided it, be not only maintained, but added to by judicious husbandry. It is not easy to retain the balance of soil fertility under cropping by returning to it the refuse of the farm in compost or barnyard manure alone. While with the advent of the manure spreader the manure is now spread more evenly than by the old hand system, yet on account of the limited amount made on the average farm the quantity available is usually distributed to the poorer parts of the field and, so long as the more fertile portions give fair crops, they get but little or none at all.

It is scarcely possible to maintain an even texture and retain high fertility without relying upon nature in the production of some crop, to in her own way build up the textural quality of the soil and add fertilizing elements with which she works. Among the many plants of the "legume" order, all of which are more or less soil builders, the one most paramount in the hands of the farmer, is clover. Its deep rooting brings to the surface from the subsoil the various salts that have leached from the upper

soil. By the decay of the roots, porosity is established, giving better drainage. By adding humus, the soil is made more friable and its moisture-holding capacity is increased. But the principle fertilizing element in clover, is nitrogen. Nature has by the operations of her laws endowed the plants of this genus with the peculiar power to extract this element from the soil air of which it forms a large per cent, and by a somewhat mysterious process store it on the roots in the form of nodules (little galls or knots), more or less distributed throughout their root system.

Much speculation was for many years indulged regarding the formation of these nodules. Recent investigation, however, has now pretty well established the fact that they are produced by bacteria, peculiar to these plants, and that the quality of the soil has much to do with the operations of these bacteria. It is known that a soil depleted of organic matter and of an acidulous character is not congenial to these bacteria and that, as a consequence, clover will not thrive on such soil.

These essentials, then, are conditional to the success of the clover plant. Where land is wet, it is important that the surplus moisture be removed before clover will do well. The application of lime as a neutralizer of the soil acid and as an amendment of tenacious clay soil is beneficial in various ways, yet it is possible to use it to excess, and on land not in need of it. On land well supplied with organic matter and especially in warm, humid weather, there is apt to be generated an acid condition, which lime will correct. But as lime is a great consumer of humus, it should not be indiscriminately used, and especially upon land of open texture where acidity is less liable to occur. Blue litmus paper may be obtained of any druggist. To test the soil place a small quantity in a vessel and wet it to the consistency of mortar. Insert a piece of the paper in this, allowing it to remain an hour. If the paper turns red, acid is present.

One ton of hydrated lime is usually allowed per acre, but on gravel or sandy soil half this amount may suffice. There are many sections where clover once did well, that will no longer produce it. This is because of the soil having been depleted of vegetable fiber or perchance is acid. In many cases it will require time and the addition of certain amendments to restore it, but with good judgment, in adding fiber, and where indicated, lime, where clover has once grown it may be made to succeed again. After the proper conditions have been restored, care must be taken to so rotate the crops as to continue the soil in these conditions, always remembering that to rob the soil will eventually rob the pocketbook.

New York. B. F. MACK.

THE ROOFING PROBLEM.

The old shingle roofs on very many farm buildings have seen their best days, and in many instances have practically outlived their usefulness. In a season of constant rains such as the past season, these roofs will leak less than in a season of alternate dry weather, but at the same time they deteriorate much more rapidly and need earlier attention, if the buildings which they cover are to be properly serviceable for the winter season. Many farmers, instead of covering their roofs with shingles use one of the serviceable, prepared roofings which are now on the market and which can be quickly and economically laid with home labor and serve a very excellent purpose in repairing or recovering these old buildings as well as for new construction. These roofings have long been in use by railroads and manufacturing institutions and even for the purpose of covering government warehouses, etc., but their use has heretofore been less general upon the farm because of the long established custom of using shingle roofs upon such buildings. A trial of these better prepared roofings would, however, be well worth the while for any farmer and their satisfactory use for urban construction is practically a guarantee of satisfaction on the farm.

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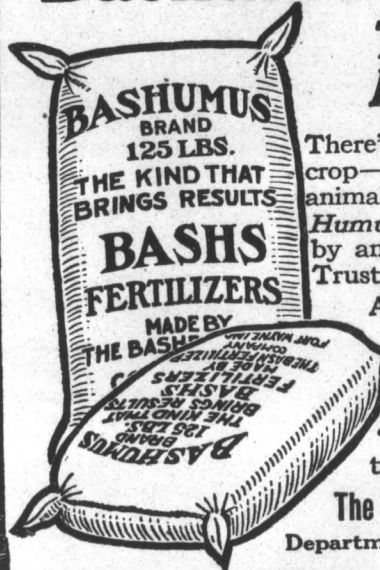
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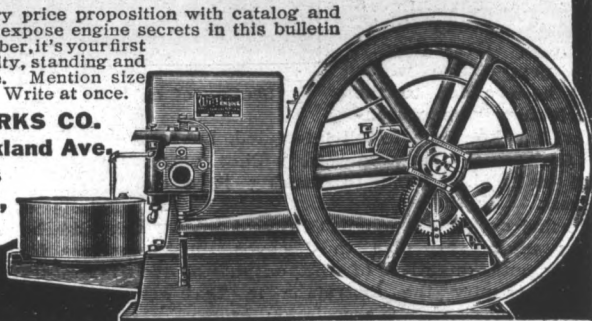
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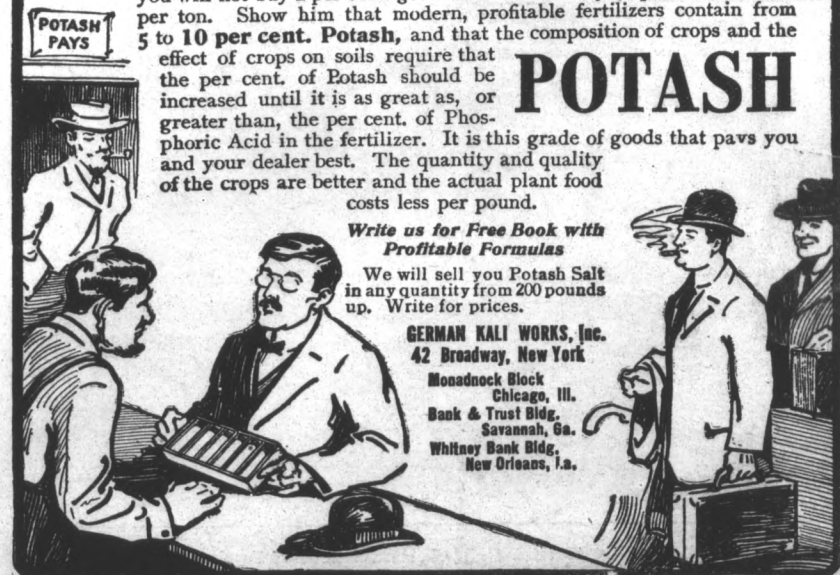
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THE DAIRY

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THE INDIRECT PROFITS FROM DAIRY FARMING.

By profitable dairying is meant the use of the cows in a way that will add most to the net income of the farm. This net income is made up of cash profits and indirect profits. Natural then, and not strange, is it that dairy farmers, who concern themselves with cows and cash profits, have failed to take into account the indirect profits of the dairy business. The gain in soil fertility, the increased value of the stock, equipment and other items usually evade appraisal. Viewed by the cash profits for the year, many a dairy farm appears to be paying scant profits, while during a decade it may show a wonderful gain in fertility and accumulate a surplus in tangible assets.

Dairying lends itself admirably to the perfection of any system of farming that has the improvement of the soil as a basis. By growing soil improving crops in rotation with corn and small grain crops it is possible to feed the soil a balanced ration through the dairy cows. Legume crops—clover, alfalfa, cowpeas and the like, not only supply nitrogen to the soil, but they afford an abundance of palatable and nutritious roughage and pasturage for the cows. Following a rational rotation of crops and feeding them to dairy cows makes it possible for the dairy farmer to maintain and increase the fertility of his farm. It is the only way of eating the cake and having it.

The greatest question before the dairy farmer today is the growing of suitable food crops and its reciprocal effect upon the fertility of his farm. How much milk each acre of land can be made to produce is as great a dairy question as how much milk each cow can be made to give. Many eastern dairy farmers have attempted to set the milk producing end of the business over against the crop producing end, thus giving it an impossible independence, but from the unfavorable results has come the growing recognition of the fact that plants and animals—dairy cows and forage and grain crops—are economically inseparable. Their relationship has been firmly established in practice. In its best estate the dairy farm produces food for the cows. One cannot neglect to take advantage of these indirect profits from the presence of dairy cows on his farm and find his largest returns through the cash profits.

On the well managed dairy farm there is an even distribution of labor throughout the year. In this way the help become accustomed to the farm and its affairs and naturally take an interest in pushing the work along. In this way the dairy farmer has a great advantage over those who grow crops, and who are forced at various times during the year to seek extra help. By hiring help for short periods of time one is forced to pay maximum wages for minimum efficiency.

In dairy farming more than in many other types of farming there is a family interest in the affairs of the farm. All members of the family become interested in the dairy business. The boys talk dairy cows and by measuring their judgment beside that of their elders they rapidly mature in thought. When you get a boy interested in the activities of the farm he is growing mentally in the right direction.

One of the most important indirect profits from dairy farming is the home market that it affords for the products of the farm. The dairy farmer can profitably utilize such feeds as corn fodder, straw, damaged hay, waste vegetables and other things that cannot be marketed profitably. On many farms the methods of figuring profits charge the cows with all the roughage at market prices for good quality, when they are actually compelled to eat large quantities of very inferior stuff. If you charge the cows with the price of good roughage, you should credit them with the real difference in value between that which they consume and the market price of that of good quality. Is it wrong to expect them to pay market prices of good foods for foods of doubtful feeding value?

The man who markets his field crops through dairy cows is not dependent upon the condition of the hay, grain and live stock markets at any one time during the year. There are business inter-

ests that aim at certain seasons of the year to depreciate the prices of farm products. The dairy farmer is less at their mercy than the stock and grain farmer, because he has something to sell every month during the year. The stock and grain farmer cannot do this with their stock and grain to anything like the same extent.

Another indirect profit from dairy farming is the cutting down of the expense of furnishing food for the family. When one has plenty of milk, cream, butter, cheese, cottage cheese, etc., and an occasional veal to kill, the cost of furnishing food for the family is reduced to a minimum.

In raising young stock and keeping his fences and buildings in suitable condition for profitable dairying the farmer is gradually accumulating a surplus of stock and adding to the value of his property. In no other way is it easier for the average farmer to get together a thousand or two thousand dollars than to gradually build up a herd of dairy cattle through care in buying and raising them and selling them when the prices are favorable. I know a number of successful dairy farmers who plan their farming so that they have from 20 to 30 good cows to dispose of at public sale every fourth or fifth year. You may say that this is not good dairy management; perhaps it is not, but there are times when it is mighty convenient for a farmer to clean up a thousand or two thousand dollars in a bunch. These men conduct their dairying on a profitable basis, and by growing young stock and buying a likely looking heifer here and there when they have the money, they use their dairy herd as sort of a savings bank, until they desire to make another sale. In addition to the direct profits from the sale of dairy products, they are each year adding to their capital stock.

Another indirect profit from the dairy business is the fact that it encourages the co-operative movements. Co-operative movements have been successfully managed, and the results obtained have been far greater than could have resulted from one individual working alone. Bulls can be purchased by a company or group of men, cow-testing associations made immensely successful and in various ways effective joint efforts can be directed toward objects of common importance. It is the isolated dairyman who is apt to be a laggard. Progress is keenest where interest is keenest. One first-class dairy farmer in a few years can improve the stock and methods of his neighborhood, provided he has sufficient public spirit. Every producer of milk would be benefited by identifying himself with the local or state organization devoted to his industry. Especially valuable would be the assistance gained by joining a cow-testing association.

On thousands of farms where a cash crop is grown for market the dairy provides the key to the system of maintaining soil fertility. In such cases the indirect profits from the dairy business are greater than the cash profits. In my own business I find that by keeping from 24 to 32 good dairy cows and making milk for the city trade, that I can raise from 3,000 to 4,000 bushels of potatoes each year without buying a large amount of plant food, other than that obtained through the purchase of dairy feedstuffs. It is by taking advantage of and making the most from these indirect profits that one is enabled to accumulate a surplus from the dairy through a series of years.

New York. W. MILTON KELLY.

A GRAIN RATION WITH MIXED HAY AND SHREDDED CORN FODDER.

Which would you advise for the best grain for cows, how would you mix, and what amount would you feed? Wheat bran at \$27 per ton and ground oats at \$26 per ton, or wheat bran at \$27 per ton and corn meal at \$27 per ton, and how much cottonseed meal would you feed in connection, if any? I have clover and timothy hay and shredded cornstalks.

As the roughage part of this ration is quite deficient in protein it would hardly be practical to make up a ration of wheat bran and ground oats, or wheat bran and corn meal, which would furnish the amount of protein the cows would require to do their best. Consequently I would feed in connection with these grains some cottonseed meal or oil meal, and since there is no succulent food in the ration I would much prefer to use oil meal instead of cottonseed meal, because it will have a better effect upon digestion. However, you can't buy a pound of digestible protein quite as cheap in oil meal as you can in cottonseed meal, but I think, taking everything into

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consideration, it would be the better feed in this case. And then I would suggest that you feed two pounds of oil meal per day per cow, and for the balance of the ration use wheat bran and corn meal at the prices stated. Mix wheat bran with the corn meal equal parts by weight, and if you don't care to feed the oil meal separately then I would mix 200 lbs. of corn meal and 100 lbs. of oil meal together, and feed each cow as many pounds per day of this grain as she produces pounds of butter-fat in a week. Or you can feed it in proportion to the amount of milk she gives daily—feed one pound of grain to every three or four pounds of milk produced in a day. I think, however, that to feed in proportion to the butter-fat produced per week, is better, because a cow giving rich milk and not so much of it, requires more grain in proportion to the amount of milk she produces than one giving a poorer quality of milk. In other words, it takes more food to produce a pound of rich milk than it does to produce a pound of poor milk. Of course, the cows should have all of the mixed hay and all of the shredded corn fodder they will eat up clean without wasting.

HOW MUCH SILAGE TO FEED COWS —HOW MUCH GRAIN TO FEED.

This is my first experience in the dairy business. I am less than 30 years of age. I have always been on a farm, but have never before depended on the cow for the entire income. I have 20 cows and have room for five or six more. I have a silo that holds 150 tons which is nearly full. Have plenty of corn fodder but no hay. The corn that was put in the silo would yield about 75 bushels per acre. I can get wheat middlings for \$24 a ton and bran for \$22 per ton. Oats are worth about 30c a bushel and rye 70c. Which of the above grains mentioned would be the best and cheapest to mix with corn, and what proportion should I mix them? At present I am feeding about 30 lbs. of ensilage a day to each cow. Am I feeding too much or not enough? I have a good basement barn. Would it be best to keep the cows in the barn most of the time? Does it pay to feed cottonseed meal? I can get it for \$1.75 per hundred lbs.

J. F. H.

Of course, it would be impossible at one writing to go over the entire subject of feeding and care of dairy cows. One could write a book upon this subject and then not tell all about it, and in work of this kind one must confine himself to the principle question asked. In a general way you can, however, discuss the whole subject very briefly and discuss it correctly, too, with regard to the care of the dairy cow. She should be made comfortable. If you make her comfortable, keep her so she enjoys herself, then you have done all that anybody can do. To be comfortable she must be in a warm, well lighted, well ventilated barn. She must be treated kindly. She must be milked clean regularly, and fed regularly, and she must be fed an abundant ration of wholesome food. That's about all there is to it, to state it briefly.

Now with regard to the amount of ensilage to feed cows: If you have the ensilage and clover hay you should feed the cows all the clover hay and all the corn silage they will eat up clean every day. There isn't any such thing as over-feeding on clover hay and corn silage. The more you can get them to eat, if they don't waste it, the cheaper will be the ration. These ought to be the basic foods to constitute the ration of a dairy cow in Michigan, either alfalfa or clover hay and corn silage, because they are the cheapest foods that can be produced. Now if you haven't got the clover hay in sufficient quantities and the corn silage then you will have to be governed accordingly, but in the future you should strive to produce enough of these two foods so that they can be fed in this way.

Now with regard to a grain ration. We want to feed grains that are richer in protein than either of these two foods so as to make a balanced ration for the cow. That is theoretically correct. Clover hay contains the protein and the carbohydrates in just about the right proportion, but corn silage is what we call a wide ration; that is, it has carbohydrates in excess of the protein. Now we must have some food in the ration richer in protein than clover hay in order to balance up the carbohydrates in the corn silage. You can't do it with corn meal, because these foods are not rich enough in protein. It is not that the cow will not do well on corn silage and clover hay and ground oats because they will, but the idea is that they will have to eat so much of these in order to get protein sufficiently to do their best that

it will be an extravagant ration, it will cost too much. Now if we will feed in connection with the corn silage and clover hay and perhaps ground oats, some other food rich in protein, like gluten feed, cottonseed meal or linseed meal, then we will have an ideal ration from the standpoint of a balanced ration and also from the standpoint of an economical ration.

Cottonseed meal probably will furnish the digestible protein cheaper than any other food. It is a very rich concentrated ration. It won't do to feed it in too liberal quantities because the cows can't stand it and it would make an unbalanced ration. Your ration would be too rich in protein. If you feed a ration too rich in protein for any considerable length of time you are liable to get your cows out of condition. In other words, you are liable to injure their health. There is very little danger from feeding the cows too wide a ration, but it makes an extravagant ration and they can't do their best. It is all right to feed fresh dairy cows about two pounds of cottonseed meal a day, and I don't think that you can get any feed that will furnish the necessary protein as cheaply as will cottonseed meal, and I would suggest that you feed your cows after they have freshened (I wouldn't feed any cow cottonseed meal before she freshened, because it is too rich in protein), but after they have freshened feed them, say two pounds of cottonseed meal a day. Then make the balance of your ration from ground oats if you have the oats. Or you can feed corn and oat chop, or corn and oat meal mixed together and ground. My advice would be to feed all the hay and corn silage the cows will eat up clean, give them two pounds of cottonseed meal a day, and then a sufficient amount of corn and oats, if you have them, so that each cow will get as many pounds of grain per day, including the cottonseed meal, as they give pounds of butter-fat in a week. I don't believe you could get any better rule for feeding dairy cows than this. To be sure, it is a pretty good liberal grain ration but it pays to feed liberally, and in this way you feed a cow in proportion to what she does.

VALUE OF GROUND BUCKWHEAT AS A DAIRY FOOD.

Please tell me the food value of whole ground buckwheat, and what stock it would be best for. I have understood it was good for dairy cows, but have never used it.

Benzie Co.

J. J. M.

Ground buckwheat is no better as a dairy food than corn, rye, oats, or barley. If we go entirely by the chemical analysis we will find that it is not as good as some of these feeds and perhaps a little better than others, and yet it will depend largely upon the kind of roughage which is fed. And again, when buckwheat is ground as a whole grain the bran of the hull of the buckwheat constitutes a part of it, and this is almost entirely indigestible. It takes some of the energy of the cow to digest or get rid of it and it has practically no food value because it is indigestible.

To compare buckwheat with a common foodstuff let us say that buckwheat contains 7.7 per cent of digestible protein with a nutritive ratio of 1:6.9, barley contains 9.5 per cent of digestible protein with a nutritive ratio of 1:7.2, oats contains 7.7 per cent of digestible protein with a nutritive ratio of 1:6.9, rye contains 9.1 per cent of digestible protein with a nutritive ratio of 1:8.3, while corn contains 7.1 per cent of digestible protein with a nutritive ratio of 1:10. So you see, chemically considered, there isn't so very much difference between ground buckwheat and the common grains which are produced upon the farm, and yet corn is more digestible or has a larger digestive co-efficient; that is, a larger per cent of the product is digestible than any one of the different foods, and buckwheat is one that contains a small co-efficient of digestibility owing to the hull of the buckwheat being indigestible.

While the buckwheat ground whole doesn't contain a very large per cent of digestible protein, when this is ground into buckwheat flour and the middlings separated and then the bran separated from the middlings we have a product known as buckwheat middlings which contains 22 per cent of digestible protein and is a splendid food to feed with the common roughage on the farm to balance the ration because it is so rich in protein. Sometimes this food can be bought for less than its intrinsic value at mills where a business is made of making buckwheat flour, but this used to be the case more than at the present time.



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LIVE STOCK

INDIANA CATTLE FEEDERS' ASSOCIATION.

To secure interest, attendance and enthusiasm at live stock meetings has ever been a problem. The Indiana Cattle Feeders' Association has solved the problem. At the sixth annual fall meeting, held at Purdue University, Lafayette, Ind., November 22, over thirty automobiles were lined up in front of the judging pavilion and conservative estimates placed the attendance at nearly 400. The sessions began on time. The speakers were prepared. Their talks were based on facts and not on hot air. Those present came to learn, and paid close attention. They asked sensible questions that were answered in a sensible manner. The meetings of this association are models that may well be followed by all live stock conventions. The enthusiasm at this meeting shows that the live stock industry is wide awake and such meetings are an inspiration to all fortunate enough to attend them.

President J. P. Prigg, of Daleville, Ind., opened the meeting by stating that Indiana's future as an agricultural state depended upon her live stock. The tendency toward grain farming is to be deplored. Indiana can feed cattle better than she can handle any other kind of live stock. Just now there is much talk in regard to farmers' credit systems. The trouble in the past has been that crops have been uncertain and any uncertainty means an increase in the rates of interest. When Indiana becomes a cattle feeding state, crops will be sure; credit systems with low rates of interest will be possible.

The relative advantages of summer and winter feeding were discussed. In defending summer feeding, C. E. Meharry, of Attica, Ind., said that when the steer is most contented, he is the most profitable and the summer-fed steer is the contented steer. Last summer a lot of 34 head, weighing 1,045 lbs. on an average, were bought early in summer. The pastures were burnt up and they either had to be sold or fed in the lot. They were fed 193 days on \$10 clover and \$30 cottonseed meal and returned 70 cents for each bushel of corn fed. Another longer fed lot on clover pasture caused the corn to return 90c per bushel. These results show the pasture feeding preferable to the dry-lot plan.

If cattle are to be marketed prior to August 1, they should have grain early. A shelter shed to protect from flies was advocated, while a low roof under a tree is ideal. The pasture helps on the labor proposition in that the manure is distributed as made. In the future, many will use ensilage to increase the capacity of the pastures. The question of whether permanent pastures can be made to pay on high-priced land is doubtful. An acre of corn silage will support three to four times as many steers as one acre of pasture. The relative values of pasture and silage are shown in the following table taken from a late Illinois experiment.

Results of Summer Feeding.

	10 Silage Steers.	10 Pasture Steers.
Initial weight	9,650 lb.	9,480 lb.
Cost in lots May 18	\$675.68	\$677.82
Average daily gain	2.15 lb.	2.31 lb.
Total feed:		
Shelled corn at 68c per bu.	18,470 lb.	18,393 lb.
Cottonseed meal at \$28 per ton ..	4,563 lb.	4,549 lb.
Silage at \$3.16 per ton	38,485 lb.	
Pasture at \$10 per acre		8 acres.
Total cost of feeds	\$350.44	\$362.51
Pork produced	586 lb.	920 lb.
Value of pork at \$8.50	\$49.81	\$78.20
Total receipts	1,058.76	1,075.88
Expenditures	1,052.92	1,067.13
Profit	\$5.84	\$8.75

It does not pay to pasture clover up to the limit of its capacity. When some grain and roughage is fed, the danger of bloating is reduced. When clover pasture is used always have a canula and trochar on hand and do not be afraid to use them. Never turn stock on clover when wet with rain or dew. Wait until it is dry. While the equipment for dry-lot summer feeding is as expensive as that necessary for winter work, the summer feeder is more certain of good prices. The feeding of nitrogenous concentrates is important. Two to 2½ lbs. of cottonseed meal per steer daily can be fed profitably. With hogs soybeans balance the ration better than any other feed, while for feeding they are worth \$2 per bushel.

The speaker stated that he was able to raise soybean hay for \$12 per acre and for feeding it had paid \$40 per acre. He protested against the present attitude of the farmer toward the tenant.

J. B. Burns, the well-known feeder, of Cloverdale, Ind., stated that it is seldom that corn belt farmers have enough land to summer feed cattle. Winter feeding means a more perfect utilization of the corn plant while in summer feeding much of the dry matter is not utilized. Feeds can be secured more cheaply in fall than in winter while the matter of gains in summer is debatable. As a rule, as good gains can be made during the five winter months as during the five summer months. Winter feeding fits well into the farm work and means a clean up of the feeds in spring, while the manure is gotten out on the fields at a time when it will be of greatest benefit. Much is gained in the value of the manure by feeding on concrete floors. Records are essential and, over a period of years, there is an average profit in the business. Hogs following winter-fed cattle can best be finished off after the cattle as they can be given clover pasture to advantage and early May is an excellent time to market them.

M. L. Moody, of Rensselaire, Ind., stated that he fed both during summer and winter. He buys at this season, using up the left-over grass and roughage, using shock corn, or silage, and cottonseed meal from January 1 to March 1, giving a full feed from March 1, aiming not to sell until they are in the best of condition. The light feeders are roughed through, put on pasture and silage and on full feed as soon as the flies appear. He will supplement pasture with silage from now on. One must feed right and be on the job all the time.

The fact was developed that a few acres of silage will furnish roughage cheaper than the same amount of grass pasture. Some have planted cowpeas with corn but were of the opinion that trouble in harvesting overbalances the added feeding value.

In outlining the work for next year Prof. F. G. King explained the reasons for using the rations to be fed. Some poor rations were fed the first year. At first, a comparison between clover and some roughage that did not balance corn was desired. They found that corn and clover produced a gain of 2 lbs. daily; corn, shredded stover and oat straw 1.3 lbs. daily and at greater cost. Then the question of replacing clover with silage came up and it was found that when silage was added to corn without cottonseed, the gains cost more than those made with corn and clover and profits were about the same; but when cotton seed was used, costs were reduced and greater gains were made. It is plain to see that silage decreases the cost of gains. With silage fed once daily along with corn and clover, profits were increased \$5.41 per steer over former methods; twice daily with the same feeds \$8.15 and silage alone \$7.83. At the same time costs of gains were decreased \$1.31, \$1.86 and \$2.30 per cwt., respectively. This winter, separate lots will be fed corn, cottonseed meal and silage; corn, cottonseed and clover, corn, clover, silage and 2½ lbs. of cottonseed meal, oat straw and corn; corn, soybean meal and silage.

The six light lots weigh 680 lbs. and are valued at \$6.50 per hundred.

J. T. Alexander discussed the market outlook, stating that tendencies are toward the short feed. The cattle movements have been liberal but are no indication of the supply. On the whole, the outlook points to the continuance of high prices.

Director Thorne, of the Ohio station, gave a masterful address on the Relation of Cattle Feeding to Permanent Agriculture.

Resolutions for increased appropriations for Purdue University were passed. Morris Douglas, of Flat Rock, Ind., was elected president; F. G. King, of Lafayette, secretary.—C. A. W.

NEW FEATURES OF THE COMING LIVE STOCK MEETING.

At the meeting of the executive committee of the Michigan Improved Live Stock Breeders' and Feeders' Association held November 14, it was decided to hold the Twenty-second Annual Meeting at the Agricultural Building, East Lansing, January 15-16, 1913. As usual, the first day will be devoted to the meetings of the various breed associations.

It was also decided to hold a fat barrow contest on this day, a suitable prize to be given for the best barrow of each one of the following breeds: Poland China, Berkshire, Duroc Jersey, Chester White, Yorkshire and Tamworth, weighing under 225 pounds, and also for the best barrow of each breed weighing 225 and under 275 pounds. With the aid of the Swine Breeders' Association very liberal prizes will undoubtedly be awarded for the best barrows of each breed. In addition to the above the Michigan Improved Live Stock Breeders' and Feeders' Association has put up \$50 to be awarded the hog showing the best dressed carcass. The judging of the various breeds on foot will take place Wednesday afternoon, January 15, after which the hogs will be slaughtered and all breeds compete in the carcass contest to be held Thursday morning. Premiums aggregating \$25 will be awarded the three best carcasses in the class weighing between 225 and 275 pounds on foot, and a similar amount to the three best carcasses in the class weighing under 225 pounds.

The only expense to the exhibitor will be that of shipping his barrows to Lansing, as conveyance will be furnished them to the College and no charge will be made for feed, care, or slaughter. A competent judge from some one of the packing houses will be secured to do the judging and explain the merits of the various entries, which will make this contest one of the most instructive features that has ever been held at any of our meetings. Arrangements will be made to dispose of the carcasses here, or exhibitors may have them shipped back home, as may be desired. Any party desiring to make an exhibit should communicate with the secretary at once, addressing him at East Lansing.

An illustrative lecture will be given during the joint meeting of all the associations, which convenes at 5:00 p. m., Wednesday afternoon. The annual banquet will be held as usual Wednesday evening, following which an excellent program will be rendered. The program of the general meeting on Thursday, January 16, should be of interest to every farmer in the state. Mr. Wayne Densmore, secretary of the Percheron Society of America, will have something of vital interest to say about draft horses on the farm. Professor W. C. Coffee, of the University of Illinois, who has studied sheep husbandry throughout this country and abroad, will have valuable suggestions to offer every farmer in the state. Mr. B. H. Rawl, Chief of Dairy Division, Dairy Husbandry Department, Washington, D. C., will address the meeting on some phase of the dairy industry.

No Michigan farmer who hopes to improve his condition can afford to miss these meetings. The meeting this year will undoubtedly be the largest and most enthusiastic that has ever been held.

G. A. BROWN, Sec'y.

PREPARING ROOTS FOR FEEDING.

The value of roots as a feed for live stock is well known to every farmer, and very many of the most expert stockmen grow an area of roots for this purpose each year. Those who do not make a specialty of growing roots for this purpose often have a surplus of unmerchantable potatoes, beets, turnips, etc., which can be profitably utilized as stock feed. Also pumpkins, cabbage, etc., are a profitable source of succulence in the ration on many farms. Too often these are fed either whole or in coarse chunks as cut up with a spade or other crude implement, incurring danger of choking and possibly the loss of valuable animals. This can be avoided by proper preparation of the roots, which is easily accomplished by the use of comparatively inexpensive machines now on the market for this purpose. Undoubtedly it pays to feed roots and other succulent feed as above mentioned, but it also pays to prepare them in such a manner as will eliminate all danger of loss from choking. Another advantage of the machine over the hand method of preparing roots for feeding is the saving of labor.

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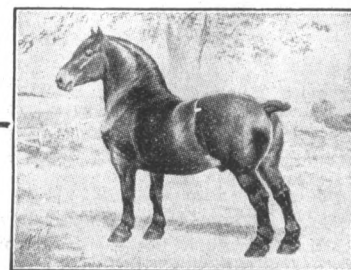
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VETERINARY

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

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

Swollen Withers and Back.—I have a three-year-old colt that has been running in pasture all summer and since stabling him I find withers and back are swollen. H. D. W., Caro, Mich.—Apply one part tincture iodine and four parts camphorated oil to swelling every day or do, but before making these applications clip off hair. Also give 2 drs. potassium iodide at a dose night and morning.

Thrush.—I have an eight-year-old horse that went lame in left hind leg some two weeks ago and I would like to know what will cure him. He walks sound, but trots lame. The leg is stocked low down and he is troubled with thrush. L. H. D., Uby, Mich.—I am inclined to believe that his lameness is low down and perhaps caused by thrush. Apply calomel to diseased frog once a day, covering heel with oakum. It is needless for me to say that the foot should be kept clean and dry, for wet and filth is the most common cause of thrush.

Aenamic.—I have a well-bred twelve-year-old mare that has been out of condition for the past four months. She perspires too freely and becomes exhausted while doing only moderate work. E. W., Dansville, Mich.—First of all you had better clip her body, leaving hair on legs, and give a teaspoonful of powdered sulphate iron, two tablespoonfuls ground gentian, a tablespoonful of red cinchona and a dessertspoonful of Fowler's solution at a dose in feed three times a day. Feed her plenty of oats, a few roots and good well-cured mixed hay. She should not be overworked.

Broken Wind—(Heaves)—Knuckling.—I have a nine-year-old mare that has a hacking cough and I am sure she has heaves. When she discharges freely from nostrils she does not show symptoms of heaves. What treatment do you advise for knuckling? L. B., Mendon City, Mich.—It is possible that your mare has chronic catarrh or nasal gleet and not heaves. When the nostrils and nasal sinuses close it affects breathing. Give a dessertspoonful of Fowler's solution, a teaspoonful of nitrate potash and a teaspoonful powdered sulphate iron at a dose in moist feed three times a day. Feed no clover, nor musty, dusty badly cured fodder and the less bulky food given her, the better. She should be exercised moderately every day. Knuckling is not always curable; however, you had better apply equal parts turpentine, aqua ammonia and olive oil to fetlock joint every day or two.

Fistulous Abscess.—My 20-year-old mare was kicked by another horse, but no wound made. Leg swelled twice its normal size, swelling reduced, but left a bunch which I lanced, allowing pus and blood to escape. The wound partially healed, but pus continues to run from two different openings. Have applied carbolic acid water and peroxide hydrogen. J. H., Goodrich, Mich.—Dissolve 1 dr. permanganate potash in a quart of water and inject some into abscess three times a day. If the opening is large enough, put in one part iodoform and 10 parts boric acid. This powder should be pushed to bottom of sack through a tube.

Punctured Foot.—A shoe became loose on my driving mare and before she lost it, shoe shifted position and nail punctured bottom of foot. This I did not know for some time. The leg swelled and my local Vet. tells me she had blood poison. I have poulticed foot with flaxseed meal and applied liniment to leg, but she does not appear to improve much. Her appetite is good, but leg remains swollen. S. C., Memphis, Mich.—Avoid making a large hole or opening through sole. Apply one part carbolic acid and ten parts glycerine to wound twice daily. The bottom of foot should be covered with oakum to prevent dirt or infected germs getting into foot. It is also good practice to apply one part iodoform and ten parts boric acid to wound before applying oakum.

Barren Heifer—Vaginal Polypus.—Have a Guernsey heifer one year old, healthy and well developed that I have bred twice, but she fails to get with calf. She bleeds from vagina occasionally. G. R., Fremont, Mich.—Your heifer may have a small vaginal polypus which, if removed, she would breed. Perhaps you had better breed her to a different bull and four hours before mating her, inject her with a soda solution made by dissolving 1 oz. bicarbonate soda in a pint of clean, tepid water.

Congested Udder—Improper Circulation.—We have a cow that has dropped her third calf. She is giving 35 pounds of milk per day, left hind quarter has not filled up as much as the other hind quarter. Her udder is apparently in good shape, not hard in the least; will this be liable to recur when she freshens again? Can you suggest the cause and remedy? S. B., Webberville, Mich.—Doubtless some congestion of udder occurred before or soon after calving which has interfered with the secretion of milk and you will now obtain some results from massage treatment. Giving drugs or applying them to bag will not do much good. When she comes fresh again, she is quite apt to have trouble in this quarter. There are a variety of causes which may have led up to this condition of udder.



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LARGE TYPE P. C. HOGS—Largest in Mich. Boars all sold. A few fall pigs. Also some extra large spring gilts to be bred to two of the best young boars I could buy in Iowa. Come or write. Free livery. W. E. LIVINGSTON, Parma, Michigan.

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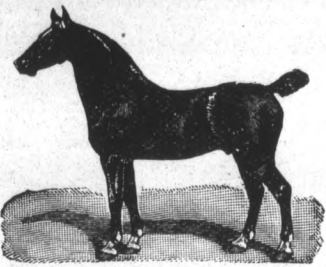
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A few choice Gilts bred for September farrow, good ones. Spring pigs, either sex, pairs and trios not akin. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

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LIVE STOCK NOTES.

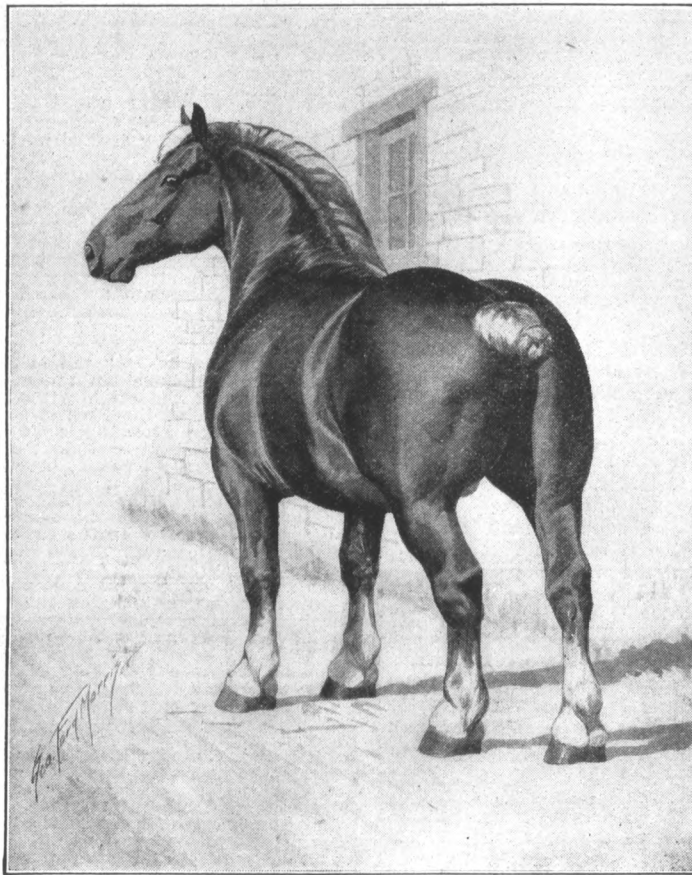
The fact that corn, hay and other feeds are unusually abundant and mostly low in price tends to strengthen the desire of hundreds of farmers to purchase live stock for fattening, for they realize that much larger profits will be made by converting corn into beef, pork and mutton than by marketing the grain. Silage is being utilized to a much greater extent than ever before, many silos having been built in various parts of the corn belt this year, and alfalfa is coming into more general use than in the past. The unfortunate fact is that there are nowhere near enough stock cattle, hogs and sheep in the country to consume the liberal supplies of feed, and this will undoubtedly help greatly to further depress prices for feed. Of late corn for future delivery has sold in the Chicago market fully 17c per bushel lower than a year ago, while oats sold 18c lower, the shrinkage in wheat amounting to about 10c. Hay is much cheaper than a year ago, last year's short crop having been followed by a full yield this year. Many farmers are afraid to venture in feeding corn this winter to cattle, however, preferring to rough their cattle through the season and pasture them next summer, but the brave ones who understand the business are likely to come out well ahead, since there is sure to be a scarcity of prime beefs for months to come. One great trouble is that farmers will place great stress on the fact that feed-

those centers on November 1 were 65,000 tierces, which showed a decrease of 59,000 tierces from October 1. The south is now buying more freely of side meats. Consumptive demand for hog products the country over is broad and healthy. There is good foreign outlet for both lard and the products. Canada, with a shortage of hogs, is an especially free buyer.

Official figures compiled from dip records show that the output of feeding sheep and lambs from Chicago up to the close of October reached only 597,531 head, a decrease of 220,132 from the like period last year, but the November shipments will make a very fair showing, as the late offerings from the ranges consisted largely of thin stock on the feeder order. It is not now compulsory to have sheep or lambs dipped before sending them to feeding districts from the Chicago market, as the federal government has withdrawn its regulations for the remainder of the year. Those who desire to have their sheep dipped can do so, however, as the stock yards company will keep its dipping plant open at least two days of every week and will make a charge of five cents per head. Of course, there will be the usual charges for feed, hay, etc., while stock is detained in the yards.

Remaining supplies of wool in the country are unusually small, as sheepmen sold out early at high prices.

Published figures show that for the first ten months of this year shipments of feeder sheep and lambs from the five leading western markets aggregated 2,-



Belgian Stallion of Quality Owned by H. & H. Wolf, of Indiana.

er steers are selling away ahead of former years in prices, recalling that a year ago sales were largely at \$4.50@5.60 per 100 lbs., wholly ignoring that conditions are reversed and that beef steers are abnormally dear. It seems a great pity that at such a time so many farmers who are feeding cattle should hasten to get them marketed on the approach of cold weather, thereby depressing present values and at the same time cutting into the future supply of finished beefs. The scarcity of cattle is brought into great prominence by the fact that the aggregate receipts of cattle at the six leading western markets this year have fallen about 750,000 head behind last year, while in age, weight and quality they show a marked falling off.

The two extremes in quality in the cattle market happen to be the scarcest in marketings—the best beefs and thin, old cows and bulls that are only adapted to the cannery requirements. For several weeks the Chicago packing establishments have been forced to send out buyers throughout the country to purchase canning cattle wherever they were to be found, and all the large and small markets have been drawn upon for supplies, prices rising at times when common grass steers were weakening in value.

The Live Stock Report says it is estimated that there are at least 15 per cent fewer stock hogs in the country than one year ago. There are those who say the decrease is 20 per cent. Swine disease is cutting off thousands of young hogs in Indiana, Illinois, Iowa, and in sections of Nebraska and Minnesota. There is promise of the plague spreading to other big swine-producing states. Iowa alone has lost 1,000,000 hogs thus far this season. During the eight months of the summer packing season there was a decrease of 2,000,000 hogs in the western slaughtering as compared with the corresponding season of 1911. It is now pretty certain that this year will close with combined receipts of hogs at the leading markets showing a decrease from last year. This will come as a surprise to many producers. On the first of this month stocks of hog products at the five centers making monthly returns, decreased 52,000,000 lbs. from October 1, and fell off 45,000,000 lbs. from November 1, 1911. The total stocks of lard at

100,410 head, a decrease of 664,363 from the corresponding period of 1911. Intending feeders of sheep should make note of this.

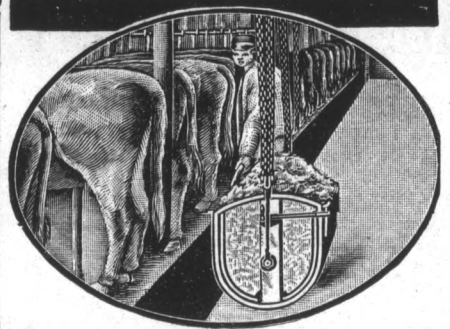
The last big herd of cattle in central South Dakota has been dispersed on account of the lapsing of leasing privileges on the lower Brule Indian reservation.

Word comes from New York that a number of butcher shops in that city have ceased to sell beef because of its dearth, customers having stopped buying it.

Farmers in the country through which the Rock Island railroad extends are blessed with such bountiful crops of grain and roughness that they are buying all the stock cattle that are to be had, there being more buyers than sellers, according to M. B. Irwin, live stock agent at St. Joseph, Mo.

H. E. Crowley, general live stock agent for the Rock Island Railroad, with headquarters at Fort Worth, Texas, says there is more grass, hay and grain in Texas than ever before and fewer cattle. He believes there are not enough cattle left in the state to eat the grass or to consume more than a small part of the grain crop. Owing to the extremely high prices for all grades of cattle, the ranges are being depopulated, and instead of beef becoming cheaper, it is sure to go much higher, according to Mr. Crowley's observations, if cows and heifers continue to be marketed.

For more than a quarter century H. & H. Wolf, Wabash, Ind., have been engaged in importing and breeding Belgians. They were the pioneers in the introduction of this draft horse to the American farmer and they have never lost their identity with the breed. Each year they select and import a class of Belgian stallions and mares that experience has convinced them is the best adapted for America, and they have now in their barns horses and mares that came in two importations this season. Henry Wolf spent four months in the breeding districts of Belgium this season and they have the strongest lot of horses on hand at this time that have ever been seen in their barns. The mares are the most uniform and most desirable that have yet been imported by the Wolfs. The accompanying cut shows a Belgian stallion typical of their importations.

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DETROIT, DEC. 7, 1912.

CURRENT COMMENT.

The sixteenth annual Secretary Wilson's report of the Secretary of Agriculture for 1912, just made public, contains the customary figures illustrating crop production for the year, which give every promise of a continuance of the prosperity which has been enjoyed by the American farmer during recent years. The present year has been one of bountiful production and prices of agricultural products have remained good, although not as high for many products as last year. Notwithstanding this fact the total value of agricultural products for 1912 is so far above that of 1911 or any previous year that the total production of farm wealth is the highest yet reached, by half a billion dollars. Based on the census items of wealth production on farms, this report estimates the grand total for 1912 to be \$9,532,000,000. Regarding the increase in the prosperity of the American farmer during the past 16 years, the report says:

"During the last 16 years the farmer has steadily increased his wealth production year by year, with the exception of 1911, when the value declined from that of the preceding year. If the wealth produced on farms in 1899 be regarded as 100, the wealth produced 16 years ago, or in 1897, is represented by 84, and the wealth produced in 1912 by 202.1. During the 16 years the farmers' wealth production increased 141 per cent.

Of the crops for 1912 corn was, as usual, the most important. This year's corn field would, according to the comparisons given in this report, cover an area half as large again as Italy, or nearly equal the size of France or Germany. This year's crop is the largest the country has ever produced, reaching the enormous aggregate of 3,169,000,000 bushels, valued at \$1,759,000,000. This crop is worth to the farmers of the country 20 per cent more than the average corn crop of the previous five years.

Hay has returned to its old place as the crop second in value. This year's crop amounted to 72,425,000 tons, which is 16 per cent above the average crop for the past five years. The value of the crop is \$861,000,000 and has never been equalled.

The country's wheat crop is estimated to be worth \$596,000,000, an amount which has been exceeded but twice in the history of the country's wheat production. The quantity of the crop, 720,333,000 bushels, is 11.2 per cent greater than the average production of the previous five years.

The oats crop is fifth in order of value. Although the price has declined, the production is so enormous that the value of the crop is estimated to be \$478,000,000. The remarkable production of 1,417,172,000 bushels was 51.5 per cent greater than

the average of the preceding five years.

The potato crop, estimated at 414,289,000 bushels, is 29 per cent above the five-year average, but the value, owing to cheaper prices is below that of three previous smaller crops.

The beet sugar production of the country for 1912 will, according to the estimates given in this report, reach 700,000 short tons, a gain of about 100,000 short tons over the preceding year. Including the value of the by-products of sugar manufacture, the value of this industry in 1912 is about \$67,000,000, or practically double the value of cane sugar produced.

Other crops in which Michigan farmers are interested were also good. All of the cereals made a gain in production of 25.6 per cent above the five-year average.

The report contains interesting statistics relating to live stock and live stock products, and much other matter of interest which will be reviewed in future issues.

Comment has been made in these columns regarding the appropriation by the last Congress providing for extension work in agriculture in the northern states, and the steps which have been taken to profit by same in Michigan.

There are, however, pending in Congress other important bills providing for further government aid to agriculture through more liberal support of agricultural education and demonstration. The most notable among these are known as the Page and Lever bills. The former bill covers various lines of industrial education. It provides for the extension of agricultural education along extension and experimental lines, including a provision for a sub-experiment station in each county. It also provides for the establishment of trade schools in the cities, schools for the teaching of domestic science, the training of teachers, etc.

This bill is very broad in its provisions and carries with it an appropriation of something like \$15,000,000. Its friends claim that it will be passed at the short session of Congress, but those who are well informed consider it extremely doubtful if, although it may pass the senate, the house will vote so large an appropriation for this purpose in the near future.

The Lever bill relates more particularly to the extension of agricultural education, making possible the establishment of demonstration farms where feasible, but not making it mandatory. This bill carries with it only about one-third the appropriation provided for in the Page bill. The bill has the advantage of having already passed the house, and, as it has received the endorsement, both last year and this, of the American Association of Agricultural Colleges and Experiment Stations, it should not be difficult, with the influence of interested farmers, to secure its passage through the Senate and its approval by the President.

This would not prevent the passage of the Page bill, or that portion of it which relates to other training schools, but would undoubtedly be of greater immediate value to the farmers of the country, hence the desirability of urging our Michigan senators to vote and work for the passage of the Lever bill.

The official canvass of votes on the equal suffrage proposition dashed to the earth the hopes which had been inspired, in those who championed this innovation, by the early and unofficial returns upon this proposition. It is unfortunate that, due to the tardiness of official returns from many of the counties containing the larger cities, where the vote was heavily against this proposition, the official returns showed larger majorities than the earlier and unofficial reports, giving rise to charges of possible fraud. An application for a recount in Saginaw county has been favorably considered and the outcome will probably determine the course to be pursued in other counties.

It may be said, however, that the women of the state who have championed this cause have shown themselves to be good losers, as they were good fighters, which will undoubtedly hasten the day when this amendment will again be submitted to the electors of the state, which undoubtedly will not be longer than four years, and probably at the general election next spring.

Supplementing the article by Mr. John Jackson, of Ottawa county, in last week's

Michigan Farmer, regarding trespassing of hunters on farms, can safely say that during the last few years over \$800 in personal property has been lost by farmers of Mecosta county by trespassing hunters, horses, cattle and poultry being shot, besides damages to fences, etc. I believe it would be policy to petition the state legislature to enact a law, with more severe penalty with both fine and imprisonment, discretionary with the court, for trespassing by hunting or otherwise on private lands in Michigan.

Mecosta Co. A. McLAUGHLIN.

HAPPENINGS OF THE WEEK.

National.

The last session of the sixty-second Congress formally opened on Monday. Sixty-six of the 93 senators and 275 of the 391 representatives were present. Practically no business was done in the senate, that body adjourning out of respect for the memories of the late Vice-President Sherman and Senators Heyburn and Raynor. A few bills were introduced in the House, one of which was for the pensioning of former presidents and widows of former presidents.

It is reported that the Equal Suffrage Association of Michigan will demand an investigation of alleged frauds in the counting of ballots in Bay, St. Clair and Gratiot counties.

A New York Central train, traveling westward at Hoffmans, N. Y., at the rate of over 50 miles an hour, was derailed. Only one of the 200 passengers was seriously injured, although all were badly shaken up.

The American Road Congress opened its annual session at Cincinnati, Tuesday. Michigan men will take part in the program, and among the exhibits will be one from the Wolverine state with many very attractive features.

The application for a change of venue in the trial of the Detroit city aldermen for bribery, has been granted by the local court and the case will be taken to the Macomb circuit, providing the appeal by the defendants' council to the supreme court is not sustained.

A rather unique law has been drafted by the faculty of the University of Michigan, which provides for the exercise of the elective franchise by students who are residents of the state without leaving the precinct of the institution where the students are attending school. Under the proposed law, a student can vote at the booth of the precinct in which he is staying and the ballot is forwarded to the county clerk of the county of which he is a resident and by the county clerk to the proper precinct in the county. The draft will be presented to the state legislature for action.

The federal government sent a proposed itinerary, which included the visit of four big naval vessels to Vera Cruz, to the Madero government at Mexico City. The proposal is causing much comment and does not appear to be well received by the officials at the Mexican capital, due to the present political situation in a number of Mexican states.

Fire in a provision house at the Union Stock Yards, Chicago, last Friday, caused a loss estimated at \$200,000. Three firemen and two employees were overcome by the smoke and ammonia fumes.

The hunting season of 1912 added another heavy loss to the number of persons who were killed and injured while engaged in the sport, although the fatalities were less than in 1911. The total number killed this year was 88 and those injured numbered 53, while a year ago the numbers were 100 and 37 respectively. Of the several states from which reports have been received, Michigan leads with 24 persons killed and 18 injured. Wisconsin comes second, reporting 13 persons killed and 12 injured. The heavy loss is attributed to the large number of persons hunting, the game warden of Michigan having issued nearly 5,000 licenses. The inhabitants of those portions of the state where game is plentiful find the sport not only a nuisance but extremely dangerous to them in their regular employments.

In the "dynamite conspiracy" case before the federal court at Indianapolis, the government has practically completed its case and now the defense will reply with many witnesses. These witnesses are composed of the defendants and 150 other persons who have been summoned.

The federal council of the Christian Churches of America meets in Chicago this week. The delegates represent more than 17,000,000 church members.

The postoffice and electric depot at Rockford were burglarized last Sunday morning. But little clew of the thieves is in the hands of officials.

Hope that the chestnut groves of the east may be saved is somewhat revived through the discovery by an agent of the department of agriculture of five different species of insects that thrive on the fruiting spores of the chestnut blight which has been devastating chestnut trees in New England, New York and Pennsylvania.

Foreign.

Whitelaw Reid, American ambassador to Great Britain, is reported to be dangerously ill.

Indians in the state of Oaxaca, Mexico, are aroused to revenge at the high handed methods of the government and last week destroyed five villages, the inhabitants of which were supposed to favor the federals.

Unexpected difficulties have arisen in the effort to arrange peace terms between Turkey and the allied countries. The trouble appears to be between Greece and the other Balkan states, the controversy being an old one. Roumania, who took no part in the contest, but who agreed to remain neutral, is also making claims for some part in the partition of Turkey as a reward for her neutrality.

It is now understood that thousands of

persons were killed in certain rural districts of Mexico by the earthquake that was felt over the entire Republic a week ago. At Acambay, 50 miles from Mexico City, 1,000 persons are reported killed, many are injured, while pestilence is reported to be ravaging the afflicted district. Bandits are also pillaging the ruins.

It appears that preparations are being made for another war in Europe. Serbia insists on holding a port on the Adriatic Sea. Her occupation of the port interferes with Austria's interests, which, it is anticipated, may cause the opening of hostilities between the two countries. In the conflict Serbia is being backed by Russia, and Austria claims the support of Germany.

Government dispatches tell of great loss of life and property from a typhoon which swept over a part of the Philippine Islands on November 25. Tacloban, with a population of 14,000, is largely destroyed. Two hundred and sixty persons are reported killed at Samar and Leyte and 50 in other territories traversed by the storm. Relief is being rushed to the unfortunate people.

The British Islands suffered from a severe storm last Sunday. Zero weather prevailed and snow fell heavily, especially in the northern section of the islands. Trains were delayed and shipping property was exposed to considerable damage. It is believed that many lives were lost in steamship and sailing vessel accidents.

CROP AND MARKET NOTES.

Livingston Co., Dec. 2.—The weather has been very unfavorable for farmers and especially this fall but winter seems to be holding off longer than usual and farmers may yet get their corn secured before winter sets in. There is probably 20 per cent of the crop in the field at this date. It is yielding much better than was expected and is of better quality than was thought before husking. Bean threshing about completed and the yield and quality was better than was expected. Wheat and clover are going into winter in fine condition. Not much fall planting being done. Fewer lambs will be fed in this section than usual.

Mecosta Co., Nov. 21.—November has been the nicest this year that it has been here for several years. Farmers are nearly done husking corn. Many of the farmers are holding their potatoes, expecting higher prices before spring. They are worth 45¢@50¢ now. Quite a lot of fall plowing is being done now. Hogs are worth 6¢@7¢; cattle from 3¢@5¢; chickens, 8¢@9¢; no turkeys around here at all; butter, 27¢; butter-fat, 31¢; eggs, 28¢ per dozen.

Ohio.

Wayne Co., Nov. 18.—We have been having a little winter weather, being quite damp and cool with a little sprinkle of snow. Corn husking is pretty well under way, some being done and others just begun. Corn is not yielding as well as expected, having quite a few small ears but well matured, no soft corn to speak of. Early sown wheat looking very good. Late sown wheat very small. The wheat market still hovers about the dollar mark. Old corn, 30¢ per basket; new corn, 20¢@25¢ per basket; oats, 30¢ per bu; butter, 30¢; eggs, 30¢.



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The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

TOY-MAKING IN GERMANY.

By LOUISE E. DEW.

It is with distinct pleasure that I recall my grandmother's garret, and if one thing more than another stands out luminously it is the recollection of a box of quaint old toys. There were wooden animals, queer soldiers, a battered doll or two, and best of all a jumping jack. The latter was a crude mechanical toy which was operated by a string somewhere in the interior of "Jack's" anatomy.

Of these toys I never tired, possibly because I was only permitted to play with them when I had been extra good, or in troublous days, when mother lay ill and I needed to be diverted. And always there were wonderful tales of how Grandmother brought them to her Little Boy Blue from quaint old Nuremberg in Germany across the sea.

Since those nursery days I have visited some of Grandmother's old haunts which she endeared to me so long ago, and at the toy centers I lived my childhood over again. While there I was astonished to learn that toys are exported from there to the amount of about sixty million marks a year. In fact, there is hardly an object to which the trade mark "made in Germany" is more applicable than to many kinds of toys, for which Germany has the monopoly.

While it is true that a great many toys, particularly mechanical ones, are made in France, the simpler kinds, and especially those carved from wood, are made in Germany. Mechanical toys are now being made in great quantities, and

in still greater variety also in the German capital, and in the old town of Nuremberg, Bavaria, which became famous centuries before Grandmother's day by the manufacture of dolls and tin soldiers. Aside from these places there are two districts of Germany, however, where toy-making has become hereditary, and is carried on as a home industry. I refer to the lower part of Thuringia, with the small town of Sonneberg as its center, and the Erzgebirge or Ore mountain district in the Saxonian mountains near the Bohemian border.

The people of Thuringia are in mourning, however, because the big new factories are encroaching on their home industry, but the families who still look upon it as a hereditary vocation, stolidly carry on their home work, which is their only means of getting a livelihood.

Many families welcome the innovations,

as they are sure of their weekly stipend when the factories attend to the initial part of the work, permitting them to do the finishing. At various places in the Saxonian mountains, for instance, where there are many factories exclusively for doll furniture, the factories furnish the home workers the rough material—the boards cut in shape, the silk or cotton fabrics, the wooden blocks, or whatever else is necessary for the particular piece of furniture they are making. While the men work in the factories, the women call for their materials, and do their work at home. The custom is to give each family only one article, as each family is supposed to be a "specialist" in chairs, tables, sofas, etc.

The pay for home work is ridiculously low—by the dozen or the hundred, and often the combined efforts of the family mean only three marks a day, a pittance,

however, which supplies their simple needs. Imagine a steady daily diet of rye bread, lard and potatoes!

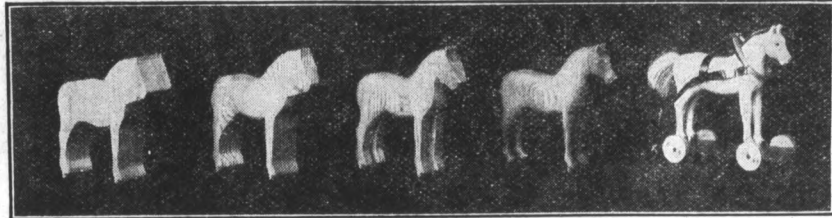
Further in the heart of the mountains there are no factories, and in such villages as Seiffen, an hour distant from the Bohemian frontier, the entire town of 1,400 inhabitants is engaged in toy-making. Truly every house is a work shop.

"Every house and hut is busy; Smell of glue where'er you venture."

Here toys have been made in every family for generations, and each has become a specialist for some kind of toy. At Hans's, for instance, only sheep are made, and one can fairly hear the bleat of the inanimate creatures, heaped about the room. At Peter's they make pins and balls for bowling games, while at Greta's they do nothing but paint glass balls for Christmas-tree decorations. Nicholas and his brothers, Fritz and Joseph, have a ship-building establishment, while Lisbeth and Gretchen dress the dolls and add the coiffures.

Not only the vater and mutter but even grossvater and grossmutter, as well as the small flaxen-haired Hans and Greta, have their task assigned. Long before the children are old enough to go to school they may be seen sitting before the tables contributing their share of the labor. The wooden soldier frau and her brood interested me hugely, for again was I reminded of the queer soldier in Grandmother's long since gone attic.

But of all the individual workers I be-



The Evolution of a Toy Horse.



Making Toys in Germany.—1. At the ship builder's. 2. Doll dressmaking and hairdressing. 3. Painting balls for decorations. 4. Frau Hannah making "angels."

came most interested in the "angel frau." It seems that angels have always been her specialty, and for over half a century she has been evolving these celestial beings, always after some pattern originated by her own fancy. To reach Frau Hannah's shop, I followed an alley, crossed the cobblestoned court, and climbed a long flight of almost perpendicular stairs, a rather perilous ascent. I marveled then how one could create angels if obliged to climb those stairs frequently, particularly if an amiable frame of mind was essential to successful angels.

Frau Hannah greeted me with a homely smile and bade me to "sitzen sie sich," which I did at the table beside her. I can't say that her angels exactly tallied with my own ideas on the subject, but perhaps she is right and I wrong. At any rate I can safely say they looked queer, and I felt sorry for them. Frau Hannah appeared satisfied with her handiwork which she displayed with naive satisfaction. Grimalkin, too, meowed her approval from the shoulder of her mistress, so the majority wins.

These angels have an advantage, however, as was proven to me. They may be utilized as candlesticks, so they are useful if not especially ornamental. I blessed Frau Hannah for my angel a few nights later when I needed a candlestick and bethought me of her gift.

By constant practice, in fact that of many centuries, the toy-makers have attained remarkable perfection in their art. Not the entire work can be done by means of the knife, as some parts have to be "turned." The lucky man who has acquired a turning lathe is always glad to help his brother worker out.

In order to instruct the children and

to better prepare them for their future work, there are special courses in craftsmanship given in the village school. These lessons are free to all the youthful attendants. But the older people are loath to depart from the ways of their forefathers, and do not take kindly to "new-fangled methods."

The toys made in these homes are mostly the inexpensive kind which sell in immense quantities year in and year out, like wooden animals, soldiers, dolls' furniture, etc., and they are disposed of by the home workers to certain agents in neighboring towns. The agent, in turn, assort them, puts them up in various boxes and ships to dealers in foreign countries. Their profit in re-selling the toys is about fifty per cent. By the time the toys get into the hands of the public, their price is about three or four times the amount paid the original worker.

The villages in which this strange art is exercised are not so far away, geographically, from the big places of industry, but the bad railroad connection makes them far, and most of these places are difficult to reach. So there is little doubt that in spite of our progressive century with its tendency for mechanical production, the old primitive way of toy-making will flourish in these hidden mountain villages, for generations yet to come.

I am wondering when all the horses and carriages, dogs, sheep, soldiers, yes, and Frau Hannah's angels are on the Christmas trees, shining and sparkling in their faultless coat of varnish, if any one will think of the poor people who made these things and who are receiving for their skillful work such poor compensation.

BRAMBLE HILL.

BY ROBERT CARLTON BROWN.

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Synopsis of Preceding Chapters.—Nathaniel Edgeworth, eccentric, hard-headed and well-to-do, is passing his declining years upon his 400-acre farm on the outskirts of the village of Turtle Creek. His household consists of Mother Hubbard, housekeeper, and Brigadier General (by courtesy) Hornbill, a fellow veteran; Zeb Wattles, an aged musician who, with his daughter Jerusha, occupies a cottage (rent free) upon the farm, also spends much time with his venerable benefactor. Estrangement and finally death, robbed Nathaniel of his only son some years previous, following which, bitter remorse induced him to grant the means of a liberal education to his sole descendant and grandson, Sidney Edgeworth. In like manner he had befriended his sister's adopted daughter, Susan Dunlap. The story opens with Susan's return from boarding school and her full appreciation of quiet Turtle Creek as she views it from her own motor car. Sidney Edgeworth has completed his course at Harvard and rented an expensive apartment in New York where he is searching for a position as diligently and sincerely as his grandfather's allowance of \$500 per month will permit. Among obstacles encountered are two college chums—Doodle, a typical case of "more money than brains," and Jim, of an altogether better sort, who has found a job in Yonkers. Jim's last night in the big city is made the excuse for an all-night celebration. On their assembling in Sid's quarters in the early morning they find a telegram announcing the death of Nathaniel Edgeworth of Turtle Creek, who, in a heated argument with Brigadier General Hornbill burst a blood-vessel and immediately passed away. After the funeral of his grandfather Sid yearns to get away from Turtle Creek but remains for the reading of his ancestor's will, only to find that the conditions imposed by that document promise to indefinitely delay his return to New York. By the terms of the will Sid inherits the farm at Turtle Creek, and valuable securities in addition provided, that he lives upon the farm, with the exception of two weeks' vacation each year, for a period of four years and during that time acquires, by gift or purchase, an adjoining strip of rough land known as Bramble Hill belonging to the foster father of Susan Dunlap; or, in lieu of acquiring Bramble Hill, he must make the farm earn \$100,000 during the four years. Otherwise, the entire estate reverts to Susan Dunlap. On serious reflection Sid decides to accept the conditions imposed and considers the possibilities in bee-keeping as a start toward his hundred thousand dollars. The profitable production of wine from the wild grapes going to waste in fields and roadsides is also considered. He wires Doodle for a case of his favorite cigarettes and develops a determination to make the best of his new environment. Jerusha points out the folly of overlooking little things and as a result Sid offers a site for the Old Settlers' Reunion, which is accepted, and prepares to earn a small sum by supplying refreshments for the occasion. At the close of the reunion Jerusha Wattles disappears, concealing herself in the van of the gypsy family which managed

the merry-go-round at the reunion, by whom she is discovered the following morning.

Jerusha looked intently into Zara's crafty face, the smile upon which was growing more sneering as the fortune-teller's hand stealthily stole out toward the purse. The girl's gaze suddenly went blank as she searched those practiced old eyes. That abstraction could mean but one thing; the girl was listening hopefully to some sound as yet unnoticed by Zara.

The fortune-teller drew closer and her hand sneaked nearer the purse. The girl half turned toward the hill-top and her lips parted slowly, an anxious look on her face.

Surely she was listening. Zara became agitated, and to cover that fact smiled the more sneeringly.

Suddenly the girl started and shot a quick look toward the road where it made a bend on the hill-top. Zara almost heard the dread rumble of wagon wheels.

"Look!" cried the girl, her eyes positively growing larger; she swung around and pointed toward the top of the hill, "there comes my father now."

Zara looked. Bango fearfully followed her glance.

In the second the pair were off their guard the girl turned, threw the small coins she had taken from the purse into Bango's face, darted through the group of amazed children and gained the road in a series of leaping bounds. She was off toward the house behind the hill like an antelope.

Not once did she look back. And there was no need of it. After a short, blustering sally in pursuit, Bango returned to his huddled family, picked up the scattered coins that even his wife had dared not touch, clouted his eldest son over his battered head, kicked the youngest image of himself, and commanded his wife to haul out the food.

Though free from pursuit, Jerusha did not slacken her speed until she had gained the top of the hill and the nestling farm houses were in sight.

Then she trudged on at an even pace, putting back the purse carefully.

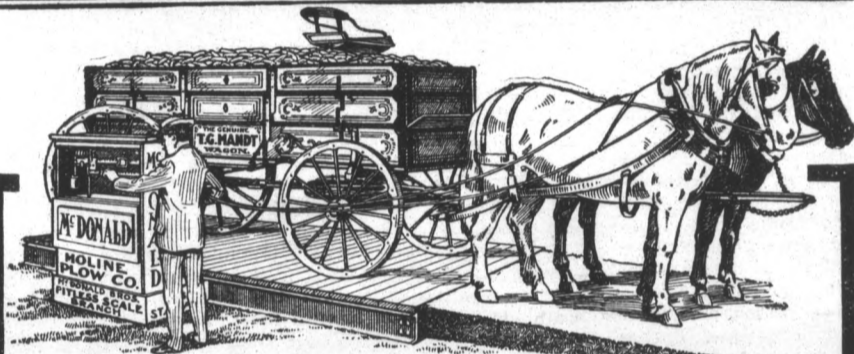
Before noon she had reached a town. It had been a hard walk and often she had darted into a roadside thicket to avoid being seen from a passing farm wagon. Her progress had been furtive and labored; but her muscles were sound and her mind healthy. Besides, Jerusha

(Continued on page 520).



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HOW TO WAIT.

BY FLOY SCHOONMAKER ARMSTRONG.

The things for which I've worked and prayed,

Have not all come my way;
Still, there is time and I have faith,
They may come any day.
But, if by chance they tarry long,
Or worse, should come too late,
Through them no paltry gain is mine,
I've learned just how to wait.

THE OPERATOR AT THE CUT.

BY EARL R. RICE.

There was a sincere attachment between William Atkins, the special telephone operator on the waterworks job, and Burke the foreman. William had at first looked upon Burke with a mind full of envy, but envy had changed to admiration. It is only fair to state, also, that Burke had at first pitied William, but out of his pity for the lad's helplessness had grown a real interest.

Burke's reason for pity might readily be seen. William's crutches were always at his side, for William was a cripple. When he first saw them Burke said: "That's too bad," looking at the crutches; and then looking at the boy's face: "But I like your grit."

William had already looked the big foreman over. He had seen him assigning a new gang of workmen to their places, and had heard him shout orders to a man on the other side of the excavation. He looked up timidly when Burke put his head into the little window of the telephone booth and made the above remarks.

But when he noted the kindness evident in tone and look, he ceased to fear. His admiration began then and there. He did not reply to Burke's greeting, but nodding toward the telephone on the shelf said: "The chief wants to speak to you."

Burke was the foreman in charge of the work of excavation for the foundation for the great engines deemed necessary at the city waterworks. A hundred men in and around the work were under his charge, and he was a busy man. The work was being done under contract and his orders were to push it as fast as possible. To keep constantly in touch with him and his progress the contracting firm placed a telephone booth, with city connections, at one end of the cut. William Atkins, the crippled son of a former employe, was assigned to the booth as operator.

Beginning as above the friendship of the two was soon on a firm basis. Burke lost no opportunity to speak kindly to the boy. He often brought his lunch and the two sat side by side on a bench during the noon hour. He often lingered at the park as the workmen were leaving, to see that William was safe on his car.

In return for these kindnesses William gave the best service possible. He studied the work of excavation and became so familiar with it that he could answer satisfactorily questions from the office, thus saving both time and effort for the foreman. He could tell at a glance if things were running smoothly, and could reckon accurately how much dirt was being taken out each day. His one great regret was that he could not do the work of a man.

As he and Burke were at lunch one day, William suddenly mentioned this to his big friend.

"Nonsense, lad!" said Burke. "You're doing all you can. That's as much as any man on the job is doing and a lot more than some!"

They both laughed at this for they remembered the discharge of a shirker the day before.

"But I wish I could do more," contended the boy. "I wish I were strong like you."

The wistfulness in tone as he said this caught Burke's attention. It called out a special effort on his part.

"Billy," he said, for their familiarity had gone that far. "It ain't all in being big and strong. You can do a man's work by doing what's expected of you. Now your job's as important as mine. The different kinds of jobs let us all in on the same level."

That was seeing things from a new angle for William and helped him to get new satisfaction out of his work. But still he longed for a chance to make his work count for something big.

Just at this time some things about the work in the excavation began to trouble William. The cut was one hundred and fifty feet long and sixty wide at the surface of the ground. It was to be thirty feet deep when finished, with its shelving sides held in place by

concrete. It was to be beautiful and well proportioned when done, but it was anything but that in the process of making. There was some danger, too, in the work, for quicksand was encountered and cave-ins must be guarded against. In spite of the pumps that worked almost night and day there was always a little water in the bottom of the cut, trickling in from hidden nearby pockets.

And what troubled William was the ever present possibility of an extensive cave-in, or sudden flooding from unexpected veins the shovels might at any moment reach. He knew that the means of escape for the men in the cut were inadequate. They came down into the pit by means of ladders along the sides, and these were often pulled out again during the half-day's work, as they were in the way and hindered. In case of either of the contingencies mentioned, a panic was sure to occur, and William had read of many lives being lost in just such cases.

He was not afraid for himself for his booth was at one end of the cut and rather out of danger. But as the excavation deepened, his concern for the others increased until it grew into a real alarm.

And there was another source of danger. Along one side of the cut ran the great forty-two-inch mains that supplied the city with water. The old pumping station was slightly at the left of the cut being made for the new and the edge of the excavation was not more than a half-dozen feet from, and for a hundred and fifty feet ran parallel to, these great water arteries. William knew that these water mains sometimes burst and flooded the region of the break. He had read that if the pressure on one side were to be suddenly released a break might occur. Whether this were true he could not tell, but as he listened to the pulse-like beat of the engines in the station he sometimes fancied he could feel the transmitted jar from the massive pipes. William studied the situation and he came to the conclusion that should anything happen to the main nearest the edge of the cut and it should pour its volume down those slippery banks for but five minutes while the men were at work they would be drowned like rats in a trap.

When he had come to this conclusion William resolved to tell Burke about it. But he feared to do so lest his big friend should laugh at him. For several days it was on the end of his tongue to tell his fears, but something stopped him each time.

At last one morning when the cut was down twenty-five feet or more he went out to his work, determined to speak. But that morning and for several days he did not have the opportunity. The office was becoming impatient for the work to proceed more rapidly, and Burke had put on extra men. For a few days, busy with his own affairs, the foreman scarcely stopped to talk familiarly with the boy.

It was a disagreeable morning on the day the accident came. A heavy storm during the preceding night had soaked the half-frozen earth, and the pumps were overworked in getting the water out of the cut. The men were two hours late in getting into the excavation. Burke laid off all but the men who were to work at the bottom. In order to hurry them the foreman went down and personally conducted the morning shift. It thus happened that, save for a man or two, the yard above was deserted, and that, too, at a time when a score of men there would have been far too few.

William was in his booth at the edge of the cut at an early hour and reported conditions to the office. The chief was impatient and irritated at this new delay, and William was glad when the morning's report was done. Burke had scarcely noticed him, but the boy turned from the desk as he hung up the receiver, and going to the door of his booth searched out with his eyes his friend down in the cut before him. A strange fear was upon the lad as he noted the slippery side and muddy bottom and the dirty water everywhere trickling in and dripping in long streamers from every bucketful of mud hoisted out by the cranes. He wished with all his heart that he had told Burke his fears.

At last he could wait no longer. He raised the megaphone in his hand to call him, but just then the bell inside rang sharply and he went in to answer.

He was reaching for the receiver when a roar like the explosion of a great gun rent the air. The whole upper edge of the bank outside flew out and crumpled down like paper. It went sliding to the



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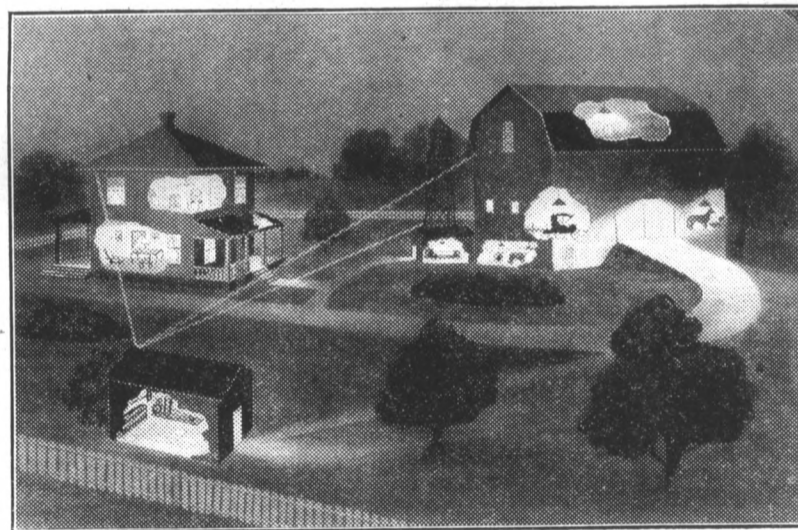
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bottom of the cut and a deluge of water followed it! The main had burst and was flooding the cut!

The edge where the booth was standing trembled under the force of the explosion, slid slowly out a foot or more and hung over the very brink! The booth tilted forward and seemed about to plunge downward to the bottom. It was prevented from doing this only by the light wires entering at the back, and now drawn taut by the weight upon them.

Dazed by the shock, William staggered to the door. The sight below calmed him in an instant. At the bottom of the cut lay a great mass of mud pushed from the very top of the bank, and spilling down the side was the full volume of the broken main. The swirling, muddy torrent had already covered the bottom and was rapidly rising along the sides.

The men in the cut were rushing here and there seeking to escape. A bunch of them collected at the foot of the ladders, two in number, by which they had descended. But as he looked one of these ladders broke beneath the weight of men upon it and all tumbled back into the pit.

He could see Burke trying to calm the men and begging them to go slowly up the other ladder. But his efforts seemed in vain for it was sagging frightfully, and thus far not a man had reached the top.

The ladders were too far toward the other end of the cut for the buckets on the crane to reach them, and William saw that unless help came from the outside many lives would be lost in the next few minutes, for already the men had lost their heads and a panic was inevitable.

He shouted to a man in the yard to run for help, but the noise of the escaping water drowned his voice. He grasped his crutches and tried to edge his way around the corner of the booth, but the edge of the cut was right at his feet and there was not room enough for his escape. He clutched the door in his suspense and helplessness and the sense of his old lament came back. Oh, that he had the strength and agility of a man!

The sharp ringing of the telephone bell at his side recalled him to himself and to his duty. He could yet summon help. He snatched the receiver and put it to his ear.

It was the chief calling. William cut in on him with a brief statement, and a quick request to hang up.

"Number? Number?" trilled the operator at the exchange.

"Fire department!" said William. He got his party, too, in a second's time. A half minute later a fire company with ladders was rushing to the rescue.

Again he called central.

"Main three-two-four!" was his call. That was the chief engineer's number, at the pumping station. The response was immediate. The big engines groaned, hesitated, and stopped.

He had summoned aid. He had stopped the engines. William hung up the receiver with a click and seized the megaphone.

"Burke!" he shouted. "Burke!" and Burke heard him and looked up.

"Help coming," he called. "Keep the men quiet."

When it was all over and the men safe, Burke took William in his arms and cried: "You've done a man's work today, Billy! Are you satisfied?"

BRAMBLE HILL.

(Continued from page 518).

had snatched some sleep in the little black hole between the music box and the lion in the rumbling, rickety wagon.

She stopped at a grocery store and purchased ten cents worth of crackers and cheese; then, munching the food greedily, for she had had nothing in twenty-four hours, she entered a strange railroad station and approached the ticket window.

"A ticket to Chicago," she said firmly. The agent glanced at her, wondered why she wore no hat, punched the required ticket, and shoved it through the window. "A dollar and five cents," he said.

"What?" cried Jerusha, her fingers searching tremblingly in the pocketbook.

"A dollar and five cents is the fare," he repeated wearily, as though it were the merest of trifles, like a twelve-dollar-a-week clerk who will repeat sharply, "Eighty dollars is the price of the rug, eighty dollars, Madam, and I call it very cheap at that."

Jerusha stood hesitating for a moment and then placed the entire contents of

the little black purse on the window ledge. The agent counted it up.

"Four cents short!" he exclaimed.

"But I've got to have the ticket!"

"And I've got to have the money."

She looked up, puzzled, into the man's eyes. It was evident he would not abate his price one cent.

"Can't you give me a ticket then to some town nearer Chicago?"

"You can get a ticket to Oak Park for ninety-four cents," he answered. "It ain't far out; it's a suburb. You can take the elevated into the city for five cents from there."

"The elevated!" she repeated eagerly, for Jerusha had never been to a city bigger than Bayview, but had read of everything. "Oh, give me the ticket to Oak Park then."

The agent grumblingly replaced the cardboard slip he had already punched and handed her a new ticket, pushing back seven pennies.

Jerusha boarded the train half an hour later and in an hour's time arrived at the suburb where her ticket forced her to alight. She left the train all trembly and excited. It was quite a fairy land for her. Many more stores than Bayview, and such a neat, clean, civilized looking place. So many automobiles. Jerusha wondered if everybody in the city had an automobile. It was all quite wonderful. Then, conscious that the station loungers and others were looking at her wonderingly, she turned up a side street and walked along past fine residences—so close to the street compared to those in Bayview, so big and new, such startling architectural effects. She was lost in the wonder of it, and this was only a suburb of Chicago.

She must go to the city itself. There was work to be had there. She didn't know what, but surely something. All she wanted was a start, a chance.

Jerusha's eye was suddenly attracted by a splendid private garage. She stood lost in the beauty of its arrangement, thinking how effective the plant clumps about it were and how fine it would be to live in such a palace, even if it were a barn. A clock somewhere chimed four and she suddenly remembered that evening was fast coming and she was hungry again. She pressed the remaining few pennies in her purse and fervently wished she had saved more before starting out; but the little hoard represented a month's saving in itself and she had treasured it secretly, as she had treasured the idea of really running away from home.

Poor Watts! She sighed as she thought of him reading her farewell note. Well, she had done it to save him. She had run away partly to save him the anxiety over not being able to send her out into the world. He would understand. She would come back to him better fitted to be his companion.

She thrilled with the thought of how her half-formed resolution to run away had taken shape suddenly in the foot-race. She had felt so awkward and out of place before the eyes of the villagers. Her panic had furnished the impetus and she had impulsively raced home, written the note to Watts, taken her savings and hidden in the woods until her chance came to slip into Bango's van.

Her lower lip quivered down into a drooping curve as she thought of Watts sitting down alone to his evening meal. Then she brightened as the hope came that he was dining with Sidney and the Brigadier General. Watts would have already found the note she had carefully pinned to his night shirt. He would understand, and he would read it to those at the Edgeworth's with mingled tears and happiness and regret in his confident old eyes. He would admire her spirit; he himself had often told how he had run away in his youth. She wished she had brought along paper and a stamped envelope to send him a letter. Already she had a twinge of homesickness.

At the thought she braced herself, determined not to give in to it. She likened her situation to Sid's and felt vaguely that his adventure and the stories he had told her of the outer world had in some way driven her from Turtle Creek. She was glad she was away at last, in spite of the tight squeeze in her throat.

Feeling the approach of evening chill she hurried back to the center of town, determined to go on to Chicago at once, never thinking but that there, as in the country, she could find food and shelter for the asking.

Jerusha hurried back to the elevated station, having luckily taken landmarks on the way. On turning an abrupt corner near the elevated station she stopped

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just short of a prancing horse, the driver nervously jerking at the reins as the skittish animal, flare-eyed, turned toward a huge, low-browed touring car maneuvering by the station, the chauffeur keying up his engine in a series of pistol-shot exhausts.

As the ripping, snorting machine bounced back from the curb it almost grazed the horse's side and the animal suddenly reared on its hind legs. It bunched down on all fours abruptly, its ears flattening as it kicked out with its hind legs, one crashing through the dashboard, and made a plunge forward that sent the coupe ricocheting.

A woman's scream came from within. The driver went white, dropped his reins and leaped to the pavement. As the animal suddenly wheeled, straight in the path of the maneuvering automobile, Jerusha's muscles tightened and she leaped to the horse's head, catching its bridle and sawing its head from side to side, finally twisting it in to the curb, where the animal stood twitching and trembling.

A final toot from the auto caused the horse to plunge and one of its fore hoofs crunched down on Jerusha's foot. She clung tight, wincing with pain, her lips drawn and white, until the auto had passed. The horse sawed its head and bucked back into the harness, then pranced and finally came to standstill.

The driver bravely came to Jerusha's aid when it was all over. He was just in time, for her head swung dizzily. She reeled, her grip relaxed on the strap and she fell backward to the street.

The lady peered out of the coupe, saw the slight form unconscious on the pavement, looked long at the face and then with a cry stepped down and spoke to a policeman who came up.

"I'll take her home with me," she said firmly, as the officer turned to call an ambulance. "It's only her foot. But she must have care."

When Jerusha came to she found her hand folded between two warm, thin ones which gave a gentle pressure as her eyelids flickered open.

Jerusha gazed about the room, wondering, trying to recollect, but as her lips moved one of the gentle hands was placed over them and tender eyes told her she must lie quiet.

The next day when she was allowed to talk she found herself alone again with the motherly looking woman she vaguely remembered having seen in the coupe.

"Your foot will mend in a week, the doctor says. You are a brave little girl."

Jerusha only blushed.
"Can you remember who you are yet, dear?" asked the kind voice.

Jerusha seemed to recall having been questioned as to her identity, but she had thought so long of how she would keep it secret when she finally did go out in the world that her lips had remained closed.

Now, alone with this woman whom she felt was a friend, it was hard for her to stammer out "Elizabeth Walters," her mother's name, which she had decided to take until she should return to Turtle Creek.

"Elizabeth Walters!" cried the lady. "I knew your face was familiar. You are Elizabeth Walters' daughter, then. But that couldn't be. You'd have a different name!"

"Oh, that isn't my name at all," cried Jerusha, twisting on the bed. "My name is Jerusha Wattles, and I live in Turtle Creek and I'd like to go back," she sobbed abruptly at the finish.

"You ran away, then?" was the sympathetic question.

"Yes." But I'm sorry. It was wrong. When will my foot be well so I can go home?" she asked.

"In a week, surely. But tell me, was Elizabeth Walters your mother's name?"

"Yes," she answered slowly.

"It must have been. You have the same eyes, hair, manner, adventurous spirit and everything." The lady's eyes grew misty as she called up the years of her youth. "Didn't your mother marry a musician, dear?"

"Why, yes," answered Jerusha, wonderingly. "Did you know her?"

"We went to school together. Something in your face reminded me of your mother. But you must talk no more now." She kissed Jerusha's hand and softly left the room.

Jerusha lay tossing impatiently, a thousand questions springing to her lips. Chance had tossed her into the lap of friends. She must tell her whole story to her mother's friend to take the taste of that lie out of her mouth.

(Continued next week.)

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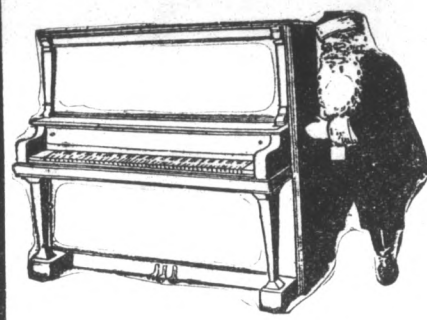
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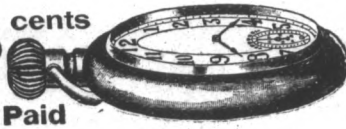
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Woman and Her Needs

At Home and Elsewhere

Don't Think Too Much of Your Children.

IS the American mother too much absorbed in her children? We are all accustomed to the poetic notion of mothers, superhuman beings whose life is one long poem (or tragedy), of self-abnegation, women who live for nothing but their children and their children's happiness, who sacrifice all their own personal desires and ambitions to help their loved ones realize theirs. And unconsciously we have come to think that the really good mother is the one whose sole thought is for her family, while the mother who insists on belonging to clubs and keeping up outside interests is a heathen.

But when you stop to think it all out, hasn't the latter mother a great deal to say in her defense? If we were to keep our children always with us, if they always carried out the plans we made for them, if they even half appreciated the sacrifices we make, the unselfish (?) mother might be all right. But when we stop to think that our children are really only men and women in the embryo, that they must make their own lives and that their interests will take them away from us in 20 years at the most, aren't we foolish to let our thoughts and lives become so centered in them that we are good for nothing when they leave us? It is all very well to be a devoted mother, but a mother who knows nothing, talks nothing but the wonderful things John and Mary do, is a tiresome creature, to say the least.

The most pitiful part of the overdone devotion is that it so often ruins the object of it. Many a boy and girl who might have grown into strong, self-reliant citizens, capable of doing good work, have been spoiled by having a mother always at hand to wait on them and think for them. The mother who jumps and runs to pick up her baby everytime he stubs his toe and falls down is doing him the greatest possible harm. Let him pick himself up unless he really is hurt, which nine cases out of ten he isn't. He is learning his first lesson right there in self-reliance. The baby who lies where he fell and cries until his mother picks him up will become the man who quits a place the first time he is told to do any hard work, and the husband who will lie in bed mornings until his wife gets up and builds the fire.

These devoted mothers make even greater mistakes. They insist on picking out their children's vocations and their helpmates, and woe to the family when mother and child don't agree. They occasionally agree on the vocation, though, only too often, the mother wants her son to become a great lawyer or doctor when he is better fitted to be a butcher or a blacksmith. And great is her disappointment and lamentation if he shows his good sense and does the thing he can. Once in a while, I say, they agree on the profession, but they never do on the choice of a life-partner. I have yet to find the devoted mother who approved of her husband's wife or her daughter's husband. They could always have done better. And having lived always for the child the mother at this time of her life has nothing outside the family to help her forget her disappointment. Mary's husband or John's wife remains the thorn in her flesh to the end of her days.

The mother who refuses to center herself in her children has a better time of it. She does not neglect them, so far as caring for their bodies, minds and souls is concerned, but she doesn't go farther and attempt to mould them to her pattern. She gives them their lessons, then leaves them to work them while she gets something out of life herself. She keeps her friends, her church, her club, her charities, anything that is her hobby and gives her an interest outside of the family. Then when the boys and girls grow up if they don't do the things she has wished they would do it doesn't spoil her life. Her heart is not entirely bound up in her children, she has only a healthy interest in them. If John decides to be a grocer instead of a preacher it doesn't

send her to bed sick. If Mary chooses to marry a farmer instead of the village school-teacher, she has the good sense to know that Mary's husband can give her a better home and old age free from the haunting fear of the poorhouse, which the teacher probably couldn't. She doesn't shed a tear because Mary has chosen to work hard with the man she wanted.

It is a good thing to remember that our children have an individuality of their own. We bring them into the world but they must live just the same lives we do, only a few years later. They have the same tempers, desires, ambitions, passions, the same future to plan for and they must decide their lives according to their temperaments and abilities. Let us watch them carefully and prayerfully, but not to the extent that we forget ourselves in planning for them. Devotion carried to this point is criminal.

DEBORAH.

Handkerchief With Drawn Work Border.

By Mae Y. Mahaffy.

A narrow hemstitched hem finishes the dainty handkerchief pictured. The border itself is half an inch wide, the threads being withdrawn for that space along the edges. This leaves the corners in the form of an open square, and the outer edges of these must be buttonholed closely in tiny, even stitches. Also hemstitch each edge of the drawn spaces in parallel groups of five or six threads each.

For the filling design fasten one thread in the center of one side of the open square, and carry it across this square, knotting it about two adjoining groups of the hemstitched threads. Weave around this knot a couple of times, under and over the grouped threads, and proceed to knot about the next pair of hemstitched clusters, and weave around the knot. This process is continued until one-third of the side has been thus treated, when five clusters are knotted together, the work then going on as before, until two-thirds of the space is finished, when another group of five clusters must be knotted together. The knotting of pairs then continues to the open corner square, and the thread is carried across this space, as in starting, fastening it in the buttonholed stitches.

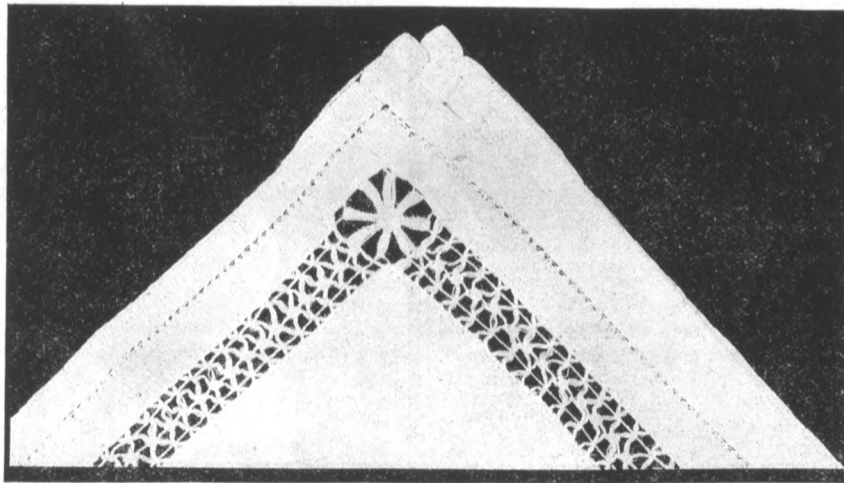
Another filling thread is carried from a short distance from one outer corner of the square, diagonally to the opposite edge of the drawn space, where it is

propriety on dollies, squares for stands, dresser sets, curtains, waists, etc. On heavier material the band will be much wider. For the fine handkerchief linen used in the illustration, lace thread or spool cotton No. 100 should be used for the filling. For heavier work a hard twisted embroidery or crochet cotton or linen will answer for the filling threads, but a softer embroidery cotton should be used for the weaving, as it works up prettier for solid effects.

A TRIO OF CHRISTMAS GIFTS.

BY L. M. THORNTON.

Sometimes one's list of friends includes a professional man and for him, one of the little "IN" and "OUT" signs for his office door will make an acceptable gift. Cut from any pretty, plain-colored silk, or from a heavy linen in neutral shade, a strip four inches wide and 11 inches long. Embroider on it the words "IN" and "OUT," placing them in such a position that when the silk or linen is drawn taut over a piece of stiff cardboard four by five inches in size, the words will appear one on either side of the sign. After putting the silk over the cardboard, finish the edges in button-hole stitch and at the top fasten a silk cord by which it may be hung upon a door. At one corner suspend a tiny pencil and



Showing Effect of Drawn Work.

knotted to the first cluster. It is then knotted about each consecutive pair, except at the points where five clusters were joined. Here the thread is carried diagonally across this group and knotted to the first cluster on the opposite edge, and then proceeds, knotting pairs each time. Another thread is carried along the opposite edge of the drawn space in the same manner, making three in all.

Additional diagonal threads are carried across each open square in the form of a cross, and all the threads are knotted at center, and woven about a few times. The weaving is then completed in sections, two threads for each. The figures along the sides are made by knotting all the threads and clusters together in the center, and weaving out separately on four divisions of four groups or threads each. This weaving continues about half of the space, and is finished off on the two central spokes in each case. Between these woven devices little blocks of weaving are placed on the adjoining threads or clusters previously dropped from the groups of four.

This design may be used with equal

propriety on dollies, squares for stands, dresser sets, curtains, waists, etc. On heavier material the band will be much wider. For the fine handkerchief linen used in the illustration, lace thread or spool cotton No. 100 should be used for the filling. For heavier work a hard twisted embroidery or crochet cotton or linen will answer for the filling threads, but a softer embroidery cotton should be used for the weaving, as it works up prettier for solid effects.

A pretty sofa pillow may be made by the woman who has never done a stitch of embroidery. Purchase one of the stamped tops having a single petaled flower, each leaf being at least an inch and a half in length, or if preferred a scroll design is pretty. Buy, by the bolt, baby ribbon of the shade appropriate for the petals of the flowers and leaves, or for the design, and fine sewing silk of the same shades. Beginning at the end of a petal fasten the end of the ribbon, take three small stitches as in gathering, and draw up the thread. Put the needle through the petal in the cushion cover close up to where the first stitch was taken, and repeat until the entire petal is formed of the gathered ribbon. A cover made in this way is handsome, and the design stands out more clearly than if embroidered.

An inexpensive and pretty sachet for the dresser drawer is made as follows: Purchase a short length of any loosely woven silk, having it just long enough

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to fit into the drawer and cutting it of the required width. At the same time buy silkoline of the same length, the body color matching the silk. The other requisites are fine batting and baby ribbon of the color of the silk. Put the lining upon the batting and fasten them securely together, being sure that they are just large enough to fit smoothly into the drawer. Make a sachet powder by mixing one-fourth pound of Florentine orris root, one-fourth pound of crushed rose leaves, one pound of powdered tonquin beans, a few drops of musk and dried petals of rosemary, bergamont, or sweet clover. This is sufficient for several sachets. Sprinkle a liberal amount of this over the batting, then put the silk in place, fastening it securely with the baby ribbon.

DIET.—No. 4.

Breakfast.

WE all know the value of a good beginning. How few of us realize the need of beginning the day right with a sane and satisfying breakfast. Many a day has been spoiled, many a business deal failed, many a heart broken, because someone had a morning headache caused by an undigested breakfast. For where one family makes a breakfast of simple cereals, eggs and bread or toast, there are a half dozen who sit down to half-cooked oatmeal, pasty pancakes, greasy potatoes, poor coffee, doughnuts and possibly pie and cake. Breakfast seems to be the one meal that the American housewife can't conquer, and the cry more often heard than any other is:

"I never know what to get for breakfast."

Foreigners have solved the breakfast problem by starting the day with coffee and rolls. While we would hardly want to see our hardworking men start out for a forenoon's labor on so slight a bit of sustenance it would be better for them than the heavy, greasy meal they often eat. More and more we are coming to see that more of us suffer from eating too much than from not getting enough, and if the high cost of living has brought to us this knowledge we can see the silver lining in the cloud.

A cup of hot water should be the first thing taken into the stomach each morning. If this simple rule were always followed a great deal of stomach trouble would be avoided. As soon as possible after rising each member of the family should drink a cup of water as hot as it can be taken. It is palatable hot, and decidedly nauseating if taken luke warm.

The model breakfast for those who do muscular work would be well-cooked cereals or flakes, eggs, soft boiled or poached, or bacon or broiled crops in place of the eggs, rolls, bread or toast, and for adults a cup of good coffee or tea or cocoa. Children should be given a glass of milk or cocoa, never coffee and tea. For, while cocoa contains the same stimulant, caffeine, that is found in coffee it has not the same effect on the nerves that it shows when coffee and tea are used.

Whatever the cereal chosen, see that it is well cooked, never less than 30 minutes for flakes, as rolled oats and the various forms of wheat flakes, and at least three hours for oatmeal in the form of grits. Flakes are more nourishing than many of us suppose and if crisped in the oven and served with slightly warmed milk they form as good a breakfast dish on cold mornings as the hot cereals. The table following will show the housewife the amount of energy generated by many breakfast foods, and from it she can decide what her family needs:

Toasted corn flakes, 125 calories; puffed rice, 45 calories; steamed rice, 110 calories; toasted rice flakes, 100 calories; rolled oats, 75 calories; cornmeal mush, 75 calories.

These figures are for one serving, but as the ideas of what is enough for one person vary, it serves only to show the relative nutritive values of the cereals.

The United States government bulletin gives the composition of boiled eggs and chops as follows:

	Water.	Pro.	Fat.	Ash.	Cal.
Whites	86.2	13.1	9.3	.9	635
Yolks	49.5	16.1	33.3	1.1	1705
Mutton loin.	42	13.5	28.3	.7	1445
Lamb loin	45.3	16	24.1	.8	1315
Veal loin	57.6	15.5	9	.9	690
Pork loin	43.8	14.1	25.6	.7	1340
Bacon	16.8	9.2	61.8	4.2	2780

The figures for meats show the number of calories to the pound. One calorie is equal to the amount of heat necessary to raise a pound of water four degrees F.

Whole wheat bread furnishes 1,675 calories to the pound; graham, 1,670, and

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fine white flour 1,655 calories. More of the wheat bread is appropriated by the body, however, than of the coarser breads, as the coarse fibres in whole wheat and graham flour are not completely digested. These breads are valuable in cases of constipation.

The question of coffee for the morning meal is one to be settled by every adult. If coffee distresses you, let it alone. If it doesn't, drink it. Half the distress from coffee comes from its being improperly made. It should be made always in an immaculately clean pot. Allow one level tablespoonful of coffee to each coffee cup of boiling water. Mix the grounds with a little egg white and a couple of tablespoonfuls of cold water, add the boiling water, stuff the spout with a clean cloth to keep in the steam and aroma, let boil five minutes, no longer, then take from the stove, pour in a quarter-cup of cold water, let stand a couple of minutes and serve at once.

BABY'S LAYETTE.

What is the fewest number of garments I can buy for my baby, and still have enough to get along without washing every day? This is more often the question which confronts the expectant mother than how fine a layette can I get her? For there are more young couples who must count every penny than there are those who can afford unlimited expense for the expected heir.

Just what are absolute necessities and what are luxuries the new mother, who has never been around a tiny baby, finds it hard to decide. To her a baby is a bundle of fine muslin and flannel, ribbons and laces and dainty jackets, the whole delicately perfumed and rolled in an embroidered blanket and put to sleep. This is the way her friends' babies look on the state occasions when she has seen them. But what the baby actually must have, and what loving friends have donated, she does not know.

Let her know, then, that the number of actual necessities is not at all formidable. Woollen shirts, woollen bands, flannel petticoats, pinning blankets, diapers, and slips are all she must actually have. If she is forced to economize she can make one set of slips do for night and day for the first two months, though it is nicer to have nainsook slips for day and flannels for night. As to numbers of articles, if you can possibly afford it, buy three shirts, four bands, three petticoats, a half dozen slips of each sort three pinning blankets, and three dozen diapers.

Many insist that the pinning blankets must be of flannel, for the extra warmth. Others prefer outing flannel or flannelette as the blankets are frequently soiled and must be washed so often that flannel would be apt to shrink and become stiff. Still other mothers dispense with pinning blankets altogether, and put the little crocheted or knitted booties on the baby from the start. No stockings are necessary, and, in fact, are only a nuisance.

For diapers nothing is better than a cheap quality of outing flannel. The birdseye diapering is not nearly so satisfactory as it is not so warm and does not absorb water so readily. Three dozen is the lowest number one should try to get along with as in this way you can usually do away with washing and boiling every day. Of course, they should be rinsed daily and the soiled ones kept in plenty of clean water, but the extra work of boiling up and hanging out daily can be dispensed with if one has plenty.

In this day of dozens of pattern firms, patterns for a layette are easily procured. The nicest garments are those in one piece, both because of the ease of making and the ease of putting on. Patterns for petticoats without a waist, simply cut princess, are better than the old-fashioned sort of waist and skirt. And the little slips which draw up with ribbons at throat and wrists are more satisfactory than the dresses of other days.

These are the things which are really necessities. If you can afford more it is nice to have three or four flannel kimonas to slip on mornings before the bath. For taking out for an occasional airing before you buy the coat and bonnet there is a dear little hooded cape made of a yard square of flannel, or, better still, white elderdown. You round off one corner of the material and gather it up, or lay the fullness in pleats, to form a little hood, like the hoods on the old-fashioned golf capes and water-proof capes. Bind the whole with ribbon feather stitched on, or embroider in scallops with blue or pink silk. You then have a cape with a hood and three corners, the sides to be folded across baby and the bottom corner to be brought up

and pinned over all to keep the little feet warm. This is so much more convenient than a coat with arms for the first few months, that every mother will like it. The fact that the elderdown will cost but a dollar and the ribbon a few cents more, while the coat and bonnet cost much more than this, does not detract from its popularity.

HOME QUERIES.

Household Editor:—Can you give me a recipe for baking-powder biscuit?—Mrs. M.

Two cups of sifted flour sifted with four level teaspoonfuls of baking-powder and a half teaspoonful of salt. Work in two level tablespoonfuls of shortening and then add one cup of sweet milk or cold water. Use as little flour as possible to roll and cut, or, better still, drop by spoonfuls in buttered gem tins. If you like your biscuit mostly crust the last way is best. This rule makes only eight medium-sized biscuit. You can multiply it to meet the needs of your family.

For "Home Nurse" in Farmer: A drop of onion juice or any other vegetable, in the milk while scalding relieves the taste and a cracker or crust of bread, or an oyster or the juice gives the milk a flavor which some relish. Of course, these must be strained out before serving. This is my recipe for sweet cucumber pickles. This is for one gallon of cucumbers: One gallon of not too strong vinegar, one cup of salt, one-half cup mustard, half teaspoon of saccharine. They will keep solid for months if you keep the liquor stirred whenever you use any. It gives the flavor gotten in the sale pickles so much relished.—A. L. S.

I wish everyone knew how to make my dandy, cheap devil's food cake: One cup sugar, butter size of an egg, one egg, quarter cup of sour milk, one teaspoon soda, one teaspoon baking powder, two squares chocolate, one cup flour. Lastly add half cup boiling water. This looks as thin as fudge but do not use any more flour than the recipe calls for.

Another recipe that helps me greatly is uncooked salad dressing: One egg, beaten separately, three tablespoonfuls of cream, sweet or sour, three tablespoonfuls vinegar, one teaspoon made mustard, three teaspoonfuls sugar. Salt and pepper. This is fine for potato or cabbage salad. It helps a great deal when one has unexpected company.

The nicest icing for cake is made of one cup sugar, one cup sour cream, one cup dates, chopped. Boil together until it hardens in water, stir until thick and spread on cake. Chopped nuts or cocoanut may be used instead of dates but they need vanilla added.

I hope I haven't taxed your patience in sending so many things, but I get a good many helps, so pass some of mine along.—Mrs. G. S. S., Paw Paw.

(Thank you. Come again.—Ed.)

Pumpkin and squash are best kept on a shelf in a dry, warm cellar or closet upstairs.

SOME SIMPLE RULES FOR SCHOOL CHILDREN TO PREVENT TUBERCULOSIS.

(From International Prize Essay).

BY E. A. KNOPP, M. D.

Every child and grown person can help to fight consumption. School children can help by obeying the following rules:

Do not spit except in a spittoon, a piece of cloth, or a handkerchief used for that purpose alone. On your return home have the cloth burned by your mother, or the handkerchief put in water until ready for the wash.

Never spit on a slate, floor, playground, or sidewalk.

Do not put your fingers into your mouth.

Do not pick your nose or wipe it on your hand or sleeve.

Do not wet your fingers in your mouth when turning the leaves of books.

Do not put pencils in your mouth or wet them with your lips.

Do not hold money in your mouth.

Do not put pins in your mouth.

Do not put anything in your mouth except food and drink.

Do not swap apple cores, candy, chewing gum, half-eaten food, whistles, bean-blowers, or anything that is put in the mouth.

Peel or wash your fruit before eating it.

Never sneeze or cough in a person's face. Turn your face to one side or hold a handkerchief before your mouth.

Keep your face, hands, and finger-nails clean. Wash your hands with soap and water before each meal.

When you don't feel well, have cut yourself, or have been hurt by others, do not be afraid to report to the teacher.

Keep yourself just as clean at home as you do at school.

Clean your teeth with toothbrush and water, if possible, after each meal; but at least on getting up in the morning and on going to bed at night.

Do not kiss anyone on the mouth or allow anybody to do so to you.

Learn to love fresh air, and learn to breathe deeply and do it often.



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Anty Drudge—"Me tired? No, indeed, not the way I wash. I use Fels-Naptha Soap, and my work is easy and pleasant."

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PRACTICAL SCIENCE.

ACCESSORIES IN THE HUMAN DIETARY.

BY FLOYD W. ROBISON.
The Function of Lime.

At the age of six months the human infant is requiring about one quart of milk daily. This milk, which is practically a saturated solution of lime, contains about one and one-fifth ounces of lime. It will be apparent that if we considered milk an example of an ideal food for an infant, we may safely take for our standard an analysis of the milk, taking into consideration the total quantity of nutrients provided in that milk at the various stages when it furnishes a complete food for the infant. This statement is untrue only when some other considerations which are furnished by nature indicate that provision is made in some other way than through the food to supply the growing infant with nutrients which it needs. When we are studying a bit later the demand that the body makes upon the food supply for its content of iron, we shall bear in mind the statement that we have just made.

The Predominance of Lime in Milk.

Some interesting comparisons have been made on the lower animals regarding the importance of supplying the full quantity of lime in the food. In dogs' milk between 30 per cent and 40 per cent of the total mineral matter is lime. In the complete analysis of the young dog, made upon a complete incineration of the body after death, there has been found 36 per cent of the mineral matter to be lime. It is, therefore, very evident that with the possible exception of phosphoric acid, lime is the very most important mineral ingredient. We should reason a priori if an analysis of the body of the animal shows lime to be the prominent mineral constituent, that naturally any food which was ideal for that animal would have to contain as an important constituent, therefore a major portion of lime in the mineral matter. As a matter of fact, there is one single exception to this statement and that relates to the phosphoric acid content.

Phosphoric Acid Content of Milk High.

As a rule, the content of phosphoric acid in the mineral matter of an animal's body is greater than is the content of lime, and as a consequence we should reason with a considerable degree of force that it was exceedingly incumbent to furnish a food containing a liberal supply of phosphoric acid. Along this line an analysis of dogs' milk also shows that its content of phosphoric acid is high, the same as is the case with lime. The peculiarity is that this phosphoric acid is usually, if not always, associated with the lime in combination. We know that in the bones of animals and in practically all mineral matter accumulations in the body the essential mineral ingredient is calcium phosphate, thus combining in a happy combination the much needed phosphoric acid with the essential, lime. We might, therefore, reason, knowing this condition to exist among the lower animals and knowing likewise the exceeding prevalence of large quantities of lime and phosphoric acid in the mineral matter of human milk, that the demands upon the human system indicated very clearly that lime and phosphoric acid should be the two mineral ingredients which the dietitian should very carefully regulate and fully supply in the human dietary.

Results of Lack of Lime in Food.

As a matter of fact, we are well accustomed to the knowledge that a very common disease among infants is undoubtedly traceable to a deficiency of lime and phosphoric acid in the food. It is not known exactly that rickets is definitely caused by a deficiency in lime. It is known, however, that among children with whom very great care is taken to secure a balance of the inorganic constituents of food, that rickets is an uncommon disease, if not one that is absolutely unknown.

There are a few animal food products which form an interesting study from the standpoint of their lime content and having under consideration the fact that lime is a very necessary ingredient these food products indicate how well they may be depended upon to furnish such an important constituent. The yolk of eggs, for example, which we know contains notable quantities of phosphoric acid, contains in the dried material nearly one-fourth of one per cent of lime,

whereas starchy food, as potatoes, contain about one-third as much lime as the yolk of egg. Lean meat, while quite high in its content of phosphoric acid, is very low in its content of lime and we therefore will realize that in this case the lime content of meat is probably not directly associated with the phosphoric acid content of the meat. Phosphorus in lean tissues is one of the constituents of the protein compound and does not, in this instance, signify its importance as a mineral constituent. In cow's milk there is only 1.50 per cent of lime in the dried substance and inasmuch as the ash content of the dried milk amounts to not over about five per cent, it may easily be seen what an important constituent of the milk lime is.

The Selection of the Diet is a Very Important Matter.

The lesson to be learned from this study of milk and of the various foods is that in selecting the proper nourishing food material for small children, some consideration should be given to the particular kinds of food given them, in order that the supply of lime may be sufficient for all of the body need. A diet of bread and milk alone does not contain a sufficient amount of lime to provide for the mineral growing requirements of children, but we may see that with the large content of lime that is present in the yolk of eggs, if eggs—and particularly the yolk of eggs, were administered, in some form or other, in connection with bread and milk diet, that the diet would be considerably more ideal from the standpoint of lime.

We shall see a little farther on another reason why milk diet alone for the growing children is not ideal. It is not so much, however, from a standpoint of lime, for we have shown that milk contains a very decided quantity of lime, but it is deficient in total mineral matter. Now, while the ash or mineral matter in the milk contains, as we have said, from 30 to 40 per cent of lime, the very fact that milk itself contains only about .7 per cent mineral matter shows that its lime content is not high enough to fully satisfy the demands of the growing child.

The Ten Months' Line.

We take advantage of this condition by advocating that children should not be kept on an exclusively milk diet after they have become able to eat other foods, and from our observations it seems plausible to place the limit of an exclusively milk diet at about ten months. We would not have the reader infer that we think an infant at ten months old should be living exclusively on solid foods, for, for a number of years, we believe that milk should form an important part of the child's diet, but at ten months in most cases some other foods, such as the yolks of eggs, various meat juices, etc., should be used to supplement the milk diet and in this way begin to build up the supply of inorganic constituents that are needed in the child's body.

Is Milk a Perfect Food?

We have been advised that there have been many instances where children come to the age of six, seven and even eight years of age without having access to much food supplemental to the milk, and our source of information indicated that the malnutrition in these individuals was very marked indeed. We are very much accustomed to hearing the scientists speak of milk as the perfect food, and if we will apply that as it scientifically should be applied, as meaning the perfect food for an infant the first few months of its life, then the statement is correct.

Lime a Tonic to the Soil.

Lime is one of the products we have considered under the head of administrative agents when applied to the soils, and it does not take place directly in the formation of organic foodstuffs except in a very limited degree. Its application to the soils is not advocated from the same point of view as that of potash and phosphoric acid, but it is in its aspects as a tonic or plant stimulant that we find the most benefits from lime. Modern methods of manufacture of food products, particularly of cereals, exaggerate the deficiency in lime which many of our foods show. The high milling of vegetable foods, and cereal foods, whereby most of the so-called inert, inorganic and fibrous material is rejected, complicates very materially the problems of the dietitian.

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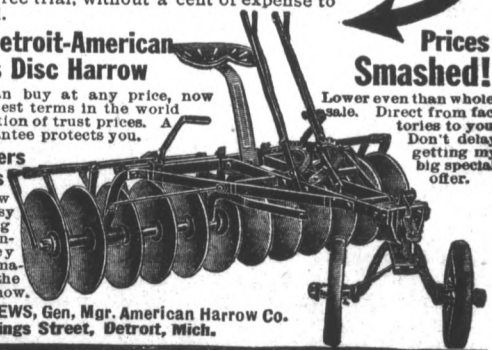
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POULTRY AND BEES

RELATION OF GREEN FOOD TO WINTER EGG PRODUCTION.

There is a general opinion among poultrymen that poultry do best when given some form of green or succulent food during winter. The function of green food is to supply a digestive stimulant. From such food the fowls obtain mineral salts that cannot be supplied any other way. Efforts have been made to supply these salts through other feeds, but so far without the success attending the feeding of palatable green stuff.

All omnivorous animals, man included, crave and need green food at all seasons. It is universally admitted that fowls like grass and eat it, but how many of us have any idea how much they eat? The amount which a hardy growin'-chick will stow away is astonishing. Chickens will trample old, tough grass, but when it is young and tender, and growing at a gait which calls for the lawn mower every few days, it seems they cannot get enough of it. Full grown fowls do not seem to want so much. They eat it with a relish, but if you give them too much they will leave some. With young stock it is just the reverse.

I am sure that feeding succulent green food adds to the number, fertility and hatchability of the eggs laid and to the vigor of the chicks hatched from the eggs. I would no more think of doing without green food for my poultry than a dairyman would do without his silo. If you want summer eggs you must have shade, and if you want winter eggs nothing will help more in keeping your fowls in a thrifty condition than plenty of green food.

Now it is a simple matter to have both green feed and shade for poultry in summer, but to have green feed in winter is not an easy task, and if you cannot meet this requirement in winter you are not interested enough in this line of work to pay you to keep hens over winter.

Supplying Vegetables and Green Corn.

As for preparing for a winter supply of green stuff I have several different methods, and all are valuable, but they require work and attention. Mangels have been used as a succulent food, but sometimes they do not prove a success. If mangels are not ripened off and harvested in the proper manner they will not keep through the winter, but will shrivel and become unfit for use as succulent food. If harvested just at the proper time there is nothing better, but do not feed to excess at first, as they act as a cathartic on fowls. I raise mangels and cabbage for the main feed and also grow some carrots, green corn and potatoes for auxiliaries. This gives them a variety, and a variety is what you want to make winter eggs.

Now some people will wonder how I grow green corn for winter. I plant a small patch to corn in the early part of July, of the red glazed smut nose variety. This will be in the roasting ear stage just before frost comes, when it is cut and tied in large shocks as solidly as it can be set together. Then I can go and get green corn for my poultry until the middle of December. At noon I take a sharp knife and shave off the corn, letting it fall into the litter on the poultry house floor. Try this and you will certainly see a football scrimmage that will do your poultry good and also cheer your own heart to think how easy it is to satisfy them.

In feeding mangels, cabbage, carrots, etc., I drive a twenty-penny spike into the studding about two feet from floor; then I impale the mangels, cabbage, etc., on this spike and let them pick at their own will. All green stuff is given promptly at noon.

Sprouting Oats for Hens.

I also have another form of green stuff which is a success, after you have learned how to grow them, and that is sprouted oats. I know of nothing better, providing you cannot or have neglected to grow other green food during the summer. My experience has proven that to make satisfactory green food the oats must be grown very quickly, and in order to get quick growth it is necessary to have three things—warmth, plenty of moisture, and sunlight.

I have read all sorts of directions for sprouting oats, and have tried home-made oat-sprouters with no success. I finally secured one of the manufactured sprouters which works admirably after learning how to operate same. Until then you will certainly condemn it. I

also caution you not to purchase too small a sprouter; I advise getting the largest size. I am not an agent for any company and speak from my own experience only. It will pay for itself in increased egg yield and the additional food it grows. The grain, being kept in a high temperature and bathed in a dense cloud of moisture, makes a remarkably quick growth. Producing a succulent, tender, and snappy food which hens highly relish, not a tough, stringy material which is the result of the old home-made way of sprouting. Five minutes' attention each day will take care of the machine. Two suggestions I would offer are that you can secure just as good results by using one-half the quantity of oats usually recommended, and that the oats should be stirred while sprouting.

Possibly some people who have never tried feeding green stuff in winter think it useless. To convince such let them make a trial with a few hens by giving them green food a time, then cut it off entirely and see if it pays with eggs at sixty cents per dozen, for that is what they will retail for before next spring.

Livingston Co. W. B. OPDYCKE.

RESULT OF HEAVY FEEDING.

Can you tell me what ails chickens when they tumble over and cannot walk? They act as if drunk. They have good appetites.

Kent Co.

H. S.

I regard this a modified form of apoplexy, or sciatic rheumatism, or whatever you want to call it. It is produced largely, in my opinion, by overfeeding, with too little exercise. It is a kind of gout. The hens are fed too much and they are not in shape to exercise. This can be overcome by cutting down the ration, by having a scratching shed, scattering the grain in the straw, and making them work for it every single day. If this is done, after a time, I think you will find this trouble will entirely disappear.

COLON C. LILLIE.

SYMPTOMS AND CURE OF ROUP.

My experience has been that if taken in the earliest stages of the disease, or perhaps before we are really justified in making a diagnosis of roup, we can cure nine out of ten cases to the extent that the specimen will still be a valuable breeder and producer.

The first symptoms are those of a common cold. Coughing, wheezing, sneezing and watering at the eyes precede the graver conditions, when the rattling in the throat, swelling around the eyes, creamy looking matter, and membranous formations prove the unmistakable signs of genuine roup. Sometimes there is a little bunch of air bubbles gathered around the eyes. It will look white at a little distance, but on closer examination you will find it as above stated. This means cold; if it continues without relief the eye will swell. The little tubes leading from the nostril to the eye becomes closed and the swelling is a natural consequence. Efficient treatment must begin at once or the fowl is doomed.

There can be rattling in the throat without roup, from a laryngeal or bronchial catarrh, but in practical treatment it makes little difference, as the treatment at this stage is about the same. The case is not roup until the false membrane is formed, the same as in diphtheria; that is, it could not be proved without the aid of the microscope. When the creamy looking matter shows around the eyes and nostrils any kind of treatment will be of little avail. I have seen them recover, with a permanent enlargement under the eye, but who would want to purchase such a specimen for a breeder, as it would be almost certain to develop roup the following winter and keep the disease continually spreading in the flock.

When the first symptoms of cold develop in your flock, clean up your poultry houses and put in fresh bedding of clean cut straw. Then go to your druggist and get a mixture like this: Tincture aconite, 2 dr.; tincture belladonna, 2 dr.; aqua, 3½ oz. This makes a four-ounce mixture and costs very little. Put a teaspoonful of this mixture into every quart of drinking water you give them, and do not let them have any other water to drink; if they do not seem any better inside of twenty-four hours, add two drachms of tincture of iron to the above mixture and continue its use in the same way. If they still seem no better, double the quantity used. Of course, it is always understood that the sick chickens are separated from the others to be doctored, but a little of the medicine, es-

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World, N. Y. City.....	1 00	1 20	75
Semi Weekly Newspapers			
Journal, Detroit, Mich.....	1 00	1 15	70
Weekly Newspapers			
Blade, Toledo, Ohio.....	1 00	1 00	55
Commoner, Lincoln, Neb.....	1 00	1 05	60
Enquirer, Cincinnati, O.....	1 00	1 00	55
Inter Ocean, Chicago, (w).....	1 00	1 00	55
Cattle, Sheep, Swine, Poultry, etc.			
American Poultry Journal, Chicago, (m).....	1 00	1 20	75
American Poultry Advocate, Syracuse.....	1 00	1 35	90
American Sheep Breeder, Chicago, (m).....	50	80	35
American Swineherd, Chicago, (m).....	50	80	35
Breeders' Gazette, Chicago, (w).....	1 75	1 45	1 00
Farm Poultry, Boston, Mass, (s-m).....	50	80	35
Fruit Belt, Grand Rapids, Mich.....	1 00	70	25
Green's Fruit Grower, Rochester, (m).....	50	80	35
Hoard's Dairymen, Fort Atkinson, Wis.....	1 00	1 20	75
Horseman, Chicago, (m).....	2 00	2 05	1 60
Jersey Bulletin, Indianapolis, Ind. (w).....	1 00	1 35	90
Kimball's Dairy Farmer, Waterloo, Ia. (s-m).....	50	80	35
National Sportsman, Boston, Mass. (m).....	1 00	1 15	70
Poultry Keeper, Quincy, Ill. (m).....	50	80	35
Poultry Pointers, Kalamazoo Mich.....	50	70	25
Poultry Success, Springfield, O. (m).....	50	70	25
Reliable Poultry Journal, Quincy, Ill. (m).....	50	80	35
Swine Breeders' Journal, Indianapolis, Ind. (s-m).....	50	80	35
Popular Magazines.			
American Magazine, N. Y. City, (m).....	1 50	1 60	1 15
Cosmopolitan, N. Y. City, (m).....	1 50	1 60	1 15
Everybody's Magazine, N. Y. City, (m).....	1 50	1 60	1 15
Etude, Philadelphia, Pa. (m).....	1 50	1 60	1 15
Mechanical Digest, Grand Rapids (m).....	25	70	25
McClure's Magazine, N. Y. City, (m).....	1 50	1 60	1 15
Musicalian, Boston, Mass. (m).....	1 50	1 55	1 10
People's Home Journal, N. Y. City, (m).....	1 50	1 55	1 10
Pearson's Magazine, New York City, (m).....	1 50	1 55	1 10
Red Book Magazine, Chicago, Ill. (m).....	1 50	1 55	1 10
Review of Reviews, N. Y. City, (m).....	1 50	3 00	
Ladies' or Household.			
Delineator, N. Y. City, (m).....	1 50	1 60	1 15
Designer, N. Y. City, (m).....	75	1 05	60
Harper's Bazar, N. Y. City, (m).....	1 25	1 45	1 00
Housewife, N. Y. City, (m).....	50	80	35
McCall's Magazine, N. Y. City, (m).....	50	80	35
Mother's Mag., Elgin, Ill. (m).....	1 00	1 15	70
Modern Priscilla, Boston, Mass. (m).....	1 00	1 25	80
Pictorial Review N. Y. City, (m).....	1 00	1 25	80
Woman's Home Companion, N. Y. City, m.....	1 50	1 60	1 15
Womans World, Chicago, (m).....	25	60	15
Religious and Juvenile.			
American Boy, Detroit Mich. (m).....	1 00	1 20	75
Boys' Magazine, Smethport, Pa. (m).....	1 00	1 15	70
Little Folks, Salem, Mass. (m).....	1 00	1 45	1 00
Young People's Weekly, Elgin, Ill. (w).....	75	95	50
Youths' Companion, Boston, Mass. (w).....	2 00	2 05	1 60
(w) New Subscribers.....	2 00	2 05	1 60
Youths' Companion Boston, Mass. (w).....	2 00	2 45	2 00
(Renewal).....	2 00	2 45	2 00

pecially of the milder solution, will hurt none of them.

In the very worst cases I would add a teaspoonful of carbolic acid to the above mixture, but the chickens do not like this and will not drink enough of it to effect a cure; in such case, make a little separate solution for them and dip their heads into it up to and covering the eyes; they will sneeze and cough a great deal, but that will help expel the mucous formation. You will find, however, that it will seldom pay to doctor these worst cases, as they will never be good, healthy breeders and producers again.

New York. A. E. VANDERVORT.

THE POULTRY MARKET.

Thanksgiving has come and gone and, locally, the slump in poultry prices which usually follows has not been experienced. Right through the heavy rush incident to the holiday the Detroit market held remarkably steady, despite unmistakable evidences of weakness in other big markets. This market has taken care of a lot of stock, both live and dressed, and the advent of colder weather this week finds the market in excellent condition with prices practically on a level with those prevailing immediately before Thanksgiving. Here, as elsewhere, the offerings have contained a pretty liberal proportion of ordinary stuff, but this has been worked off without the demoralization seen at New York and Chicago. At both of these points the receipts of holiday stock so far exceeded expectations, and the proportion of medium to poor stuff was so great, that prices slumped in the face of a fairly good demand. Since the holiday, dealers in those markets have found it hard to move the accumulations of low grade poultry, and this inability to clean up has affected prices in all grades. A careful examination of conditions in these and other large markets, however, leads to the conclusion that better preparation of market poultry would materially decrease the tendency toward accumulation of stocks. In all markets there has been little difficulty in moving first-class poultry and growers should consider well this fact in deciding when to market fowls now on feed. Most of the large markets are not now in condition to absorb large shipments of poorly fitted poultry and persistence in marketing this class of stock at this time is inadvisable to say the least.

WINTER WORK FOR THE WIDE-AWAKE BEE-KEEPER.

Little work remains to be done directly with the bees for the next few months. After seeing them snugly packed, with at least enough stores until warm spring days, nothing need be done except keep the snow from blocking the fronts of hives and keep dead bees from filling the entrances. A heavy wire, with end bent in the form of a hook, can be used once a month for removing dead bees.

However, this is the time to prepare for next season. Get supplies for the coming season ready now. Clean up and repair everything that may, by any possibility, be utilized another year. When this has been done take an inventory and you will then be in position to determine what will be needed in the way of new hives and equipment. There is another advantage in giving this order early as you will get a four per cent discount from dealers on all December orders. The discount decreases one per cent each month after December. Also at this season dealers are in position to fill orders more promptly than will be the case later on, and should a mistake occur in filling your order there will be ample time to rectify it before the busy season arrives, thus avoiding the loss which usually results from such errors in orders that have been given at the last minute, or from the inability of dealers to fill late orders at any price.

Hives, supers and fixings that have been cleaned and repaired should be given a few coats of good prepared paint or white lead and oil. Sections need not be put up until warmer weather. Foundation is not put into sections or brood frames at this season because cold weather makes it brittle and liable to break.

Don't neglect to read all available articles giving the methods and experience of practical bee-keepers and have at least one good bee book at hand, utilizing these to the utmost as aids in outlining plans for the season that is to come.

Shiawassee Co. N. F. GUTE.

It is estimated that to collect one pound of honey from clover, 62,000,000 heads of clover must be deprived of nectar and 3,750,000 visits from bees must be made.

How to Make Your Hens Lay More Winter Eggs

Your hens ought to be paying you bigger profits just now than any other time of the whole year. Prices are away up, but fresh eggs are scarce. Hens—your hens—have a tendency to put on flesh during winter instead of producing eggs. This is due to closer confinement, lack of exercise and green stuff. Hens need a tonic during cold weather to keep the egg clusters active and turn the largest possible amount of food into eggs. Dr. Hess Poultry Pan-a-ce-a will do exactly that. It positively makes hens lay more eggs.

Dr. Hess Poultry Pan-a-ce-a

Dr. Hess Poultry Pan-a-ce-a contains:
Potassium Nitrate. An Eliminant.
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Quassia. A Bitter Stomachic and Appetizer.
Hyposulphite of Soda. An Internal Antiseptic.
Iron (Sulphate). A Blood Builder.
Iron (Red Oxide). A Blood Builder.
Carbonate of Lime. An Antacid and shell forming.
Sodium Chloride. An Appetizer and Cleanser.
Under the supervision of Dr. Hess (M.D., D.V.S.) the above is carefully compounded and blended, with just enough cereal meal to make a perfect mixture.

has been on the market nearly 20 years—it is the only egg-producing tonic that has stood the test of time. A penny's worth of Dr. Hess Poultry Pan-a-ce-a is enough for 30 fowl per day. If it doesn't make your hens lay more eggs, your dealer will return your money; and it also cures gapes, cholera, roup, indigestion, etc.

Our Proposition. You buy Dr. Hess Poultry Pan-a-ce-a of your dealer. If it fails to make your hens lay more eggs and keep your poultry healthy, he is authorized by us to refund your money. 1 1/2 lbs. 25c (mail or express 40c); 5 lbs. 60c; 12 lbs. \$1.25; 25-lb. pail \$2.50; except in Canada and extreme West. If your dealer cannot supply you, we will. Send 2c for Dr. Hess 48-page Poultry Book, free.

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Ashland, Ohio



DR. HESS STOCK TONIC. A combination of powerful tonics and mild laxatives. Increases digestion—reduces food waste—puts most of the ration on the animals' bones or in the udder. A positive flesh, bone and milk producer. Ingredients plainly printed on every package—take them to your druggist and he'll tell you these tonics have a wonderfully bracing effect on steers, hogs, sheep, horses, cows, etc. Sold on a liberal money-back guarantee. 100 lbs. \$5.00; 25-lb. pail \$1.60. Except in Canada and extreme West and South. Send 2c for Dr. Hess Stock Book.

FREE. Dr. Hess (M.D., D.V.S.) will at any time prescribe for your ailing animals free of charge if you will send him full details. Mention this paper and send 2c stamp. 96-page Veterinary Book also free.

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Just put it in the drinking water, and these diseases will not attack your flock. 160-page poultry book, 4c by mail.

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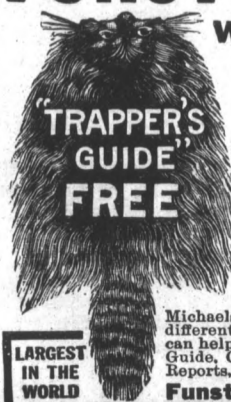
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Beauty Since BRED to win! We Start 1902 Bred to lay! You Right Customers say at 5 to 6 mos. over 200 a yr. TRY A TWO—Special from best line-bred, Battle Creek, Mich. trap-nested, laying matings \$6; hens same quality \$2.50; pullets \$1.50; cks. \$5; eggs and baby chicks in season. Custom hatching \$2 per 50 eggs in Cyphers.

MRS. Florence Howard, Petersburg, Mich. 40 Pure Comb White Leghorn Hens and 20 White Rock Hens for sale. \$1 each. Fine laying, pure bred birds.

WHITE Wyandottes—25 May and June hatched cockerels weighing from 7 to 8 lbs. from my famous winter laying strain. L. M. OLDS, Ypsilanti, Mich.

MAMMOTH Bronze Turkey toms & hens, Silver & Partridge Wyandotte cock'ls, Ind. Runner drakes. Prices reasonable. E. H. & J. A. Collar, Coopersville, Mich.

Crystal White Orpingtons—The Great Winter Layer. Yearling hens, cockerels and pullets. MRS. WILLIS HUGH, Pine Crest Farm, Royal Oak, Mich.

WHITE HOLLAND TURKEYS Satisfaction guaranteed or money refunded. Mrs. Mae Whitbeck, Montague, "Two Pines," Michigan.

Silver, Golden and white Wyandottes, a fine lot of young stock. New circular January 1st. Browning's Wyandotte Farm, R. 30, Portland, Mich.

Barred Rock Cockerels—Big, sturdy fellows, hatched from great layers. Prices reasonable. W. C. Coffman, R. 6, Benton Harbor, Mich.

WHITE Wyandottes—The most beautiful and useful of American breeds. Send for 1912 circular. A. FRANKLIN SMITH, R. F. D. 9, Ann Arbor, Mich.

S. C. R. I. Reds, Indian Runner Ducks—High class stock for utility or show. Hardy, heavy-laying strain at reasonable prices. Montrean Poultry Farm, Blissfield, Mich.

Prize Winning Barred Rocks, R. I. Reds, Mammoth Pekin and I. Runner ducks. Stock for sale. Eggs \$1.25, \$3 per set. Utility \$5 per 100. EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.

LILLIE FARMSTEAD POULTRY B. P. Rocks, R. I. Reds, and S. C. W. Leghorn eggs for sale. 15 for \$1.25; 25 for \$1.50; 50 for \$2.50. COLON C. LILLIE, Coopersville, Mich.

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HOUNDS for Coon, Fox and Deer, sent on ten days' trial, pedigreed and eligible to registry, trained and untrained. R. F. JOHNSON, Assumption, Ill.

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

FERRETS.

10,000 Ferrets for Sale—Write for price list and catalog. It's free. DeKleine Bros., Jamestown, Mich. Box 41.

HORTICULTURE

PROCEEDINGS OF STATE HORTICULTURAL SOCIETY.

(Concluded from last week).
Thursday Morning.

Robert Thompson, the Ontario fruit expert, answered many questions at the opening session on the last day, and some of the information given regarding St. Catharines conditions and prices was as follows: Strawberry pickers are paid one cent a quart and the canneries usually pay four to six cents a box, though the price this year was only 3½ cents. Leading varieties of currants raised are the Cherry and Wilder, and the Wilder seems to pay best. The Williams is the leading strawberry and is best for canning factory. We consider 7,000 quarts of strawberries per acre a good average yield. We take off only one crop of berries. Stable manure is used as a mulch. Black raspberries are not grown on account of poor yield and low prices. The Marlboro and Cuthbert are leading red raspberries and bring eight cents at the factory. Would advise following strawberries with tomatoes.

The regular program of the day was then taken up and Horace Sessions, of Oceana county, gave a helpful talk on "How to Make a Success of Peach Growing." He said in part: "Of first importance is the man. He must love the business. He must be enthusiastic and confident that he will succeed. The personal touch is all-important. Don't try to raise peaches by proxy. Be 'Johnny-on-the-spot.' Then there is the matter of right location of orchard and the proper setting of trees. Many orchards are set too shallow on rolling land. Bodies of trees should be set six to eight inches deep on level land, while on rolling ground two inches is sufficient. As to distance apart I advise setting 25x20 feet, also putting a little fertilizer in with the tree to give it a start. I believe in good rich land for peaches. Cultivation of orchard should start early and stop early. We cultivate orchards twice a week, using disk and following with spike-tooth harrow. We head the trees low—about two feet. We have a block of 10 acres of 23-year-old trees that have borne 19 consecutive crops, due largely to heavy trimming. We can pick one-half the peaches from the ground and all of them from a four-foot ladder without reaching. We harvested 8,000 bushels this year. The Gold Drop has made us the most money. Of the later plantings the Elbertas lead. The yellows has not been serious with us as yet. Three years ago we took out 34 trees affected with yellows, but this year we found only four trees and no 'little peach.' For cover crop we use sand vetch and rye. Our soil is sandy loam with clay subsoil. Brown rot was noticed in the fruit for the first time this year.

Oscar Braman, of Kent county, led in the discussion. As to location of orchard he advised high, well-drained land and prefers northern to eastern slopes. Mr. Braman has a three-year-old orchard planted on tough June grass sod that is conceded to be one of the finest in the state. The land has had no manure for 15 years. As to varieties the St. Johns, Engel's and Elberta were recommended for shipping, while the Dewey is one of the best for Grand Rapids local trade. The Oceana has been very profitable both for shipping and local market and might be called a dual-purpose peach. In pruning Mr. Braman forms the head 24 to 36 inches from ground, leaving three to five limbs and cuts back from one-quarter to a third every year. In pruning he leaves heaviest limbs on side of the prevailing winds. In spraying he advocates thoroughly soaking the trees. To half do this job is time and money thrown away.

"Problems that Confront the Michigan Fruit Grower," was the subject of a most interesting talk by Paul Rose, of Benzie county. Mr. Rose is able not only to do things but he can tell others how and his discussion of this big subject was very suggestive and practical. Some of the points brought out were as follows: "If you are located wrong, far from market and shipping facilities, sell out and start right. You've got one of the best markets in the world right around Grand Rapids. Mr. Braman has just been advising us to select the highest land for peaches, but that would not do in our locality. The high points are too wind-swept and the best location is on the slopes, just out of the winds. Don't buy trees of a peddler but go to a reliable nurseryman. As to distance apart for planting, I'm a crank on that subject. Our sour cherries are 30x40 feet. We got six cents a pound for sour cherries this year, or more money than the western fellows did. As to tree diseases in our locality, we have leaf curl, that is all—no yellows, or little peach. For maintaining fertility in the orchard I use commercial fertilizers and cover crops. It pays to be radical in thinning fruit. The slack grower is perhaps the greatest problem, for he interferes with good growers. The help problem is also formidable. We run a boarding house, put up tents, with floors in, and furnish gasoline stoves for cooking. Some people who plant trees do not think about the help problem. Northport growers are planning on setting 1,000 acres to Montmorency cherries, which is all right if they know where they can get 1,000 pickers to come on a certain day each year and stay by them through harvest."

Charles B. Welch, of Allegan county, led in the discussion and stated that the biggest problem confronting the grower is that of marketing the fruit. People must needs be educated to the benefits of co-operation. Not all of us can put up an attractive package and not all of us are good salesmen.

At this juncture J. Pomeroy Munson, of Kent county, newly chosen president of the society, was introduced to the members by Mr. Farrand, retiring president, and Mr. Munson presided during the remainder of the meeting.

"Things Learned by Renting Apple Orchards," was the next topic, the speakers being W. S. Pullen, of Hillsdale county, and T. A. Farrand, of Eaton county. Mr. Pullen started in the work four years ago and now there are at least ten men in the business and about 25,000 trees in that section are being cared for. He showed that it is easy to get too many trees—more than can be taken care of creditably. Said he: "The average price paid to farmers this year in our locality was \$1.75 per barrel but the orchard renters must get a better price than this. We must get \$2.50 a barrel or get out of business. Better grading and packing of fruit is our only salvation."

After six years' experience in renting orchards, Mr. Farrand says that he has learned a lot about human nature and has stored up far more experience than does the man with the orchard at his back door. "Much that we learn by experience," said he, "and prepare for next year, doesn't happen, but something else happens to bump us. One must be on the job personally to get things done. There is the shipping problem, the barrels, the team work and all the details to look after. Men going into the orchard renting business should pick good varieties, the fewer the better, get their orchards cheap and as near a shipping point as possible. There are two sides to look at and the financial side alone does not appeal to me but rather the satisfaction of making orchards fruitful and profitable for the first time and showing others the neglected gold mines on their farms."

Closing Session.

"With good apples selling at \$2 per barrel, what encouragement have we to go on setting out new orchards?" was the question asked after the noon recess Thursday. "Yes, go on setting orchards," replied Mr. Farrand. "From the rental basis \$2 is low, but at \$1.75 to \$2, with a good crop, the owner is making something." Charles W. Wilde, of Kent county, said that the grower ought to get at least \$2. His help is costing him twice as much as in former years. Many farmers also neglect to figure their own time as worth something. Mr. Wilde described his overhead ice storage house at the farm.

J. H. Broderick, of Ontario, showed diagrams of his pans for preparing stock mixtures of lime-sulphur and stated that he prepared and used 5,000 gallons last year.

Robert Thompson, manager of the Cold Storage & Forwarding Co., St. Catharines, told of its benefits, which are more marked indirectly than directly. This joint stock association was formed 16 years ago and the price of land has gone up in sections where the association is working. Members get better than the average prices. The association has at least 12,000 acres of grapes and received one cent more per basket than the prevailing price this year. The association improves the tone of the district. In the purchase of supplies every grower is furnished, whether a member or not.

Rev. A. Begnall, manager of the Northport Fruit Growers' Association, formed

three years ago, described its successful workings. At the outset the organization was formed simply for educational purposes, then they started buying spraying material and packages co-operatively, and last year they started shipping together, sending out 11 cars. This year's shipments to date are 23 cars. The standard of packing has been raised 300 to 400 per cent. Experience has shown that it pays to keep out of the big markets and cultivate trade in cities of medium size. The net returns to Northport growers on Duchess apples this year was \$1.85 per barrel.

Since the Sulzer apple law provides for no inspectors, Mr. Hutchins asked Mr. Thompson whether the Canadian fruit marks law would have succeeded without inspectors. Mr. Thompson replied that it would not have succeeded without inspectors. Mr. Thompson replied that it would not have been successful and that the number of inspectors had been increased until now there was at least one in every county.

Soil analysis, from the chemist's standpoint was discussed by Prof. A. J. Patten, of the Michigan Agricultural Experiment Station. Contrary to the theory that plants must take up food in its simplest elements and since energy is expended in building up this food in various forms, Prof. Patten raised the question why plants may not save this energy by taking compounds that can be built up in the laboratory. The plant gets all its nitrogen as nitrates and must spend energy in transforming its food into the various compounds. The speaker said that he has no patience with the man who preaches soil exhaustion and asserted that the maintenance of fertility is a problem that can and will be solved.

Next came the report of the committee on fruit marketing associations and resolutions, as already mentioned in the first day's proceedings. On motion of George Friday the society again endorsed the Smythe bill, which passed the last legislature and was killed by the governor.

Spraying problems were discussed by Profs. Eustace, Pettit and White, of the M. A. C. Prof. Pettit spoke of the old time lime and sulphur, the home mixture with excess of lime and sludge. Put it on hot if possible. This kills the bud moth and plant lice and is effective in killing scale. The sludge gives body to the spray. Speaking of the prevalence of apple scab this year even in orchards that were sprayed Prof. White accounts for this in one of two ways, either the spraying was not done at the right time or was not done thoroughly. He still recommends the commercial lime-sulphur to control apple scab, beginning when blossoms are three-fourths fallen. It will not kill the bees. Lime and sulphur was recommended to control peach leaf curl.

Prof. Eustace told of an experiment in spraying cherry and European plum orchards of Benton Gebhardt, of Oceana county. The trees were sprayed with Bordeaux and with commercial lime and sulphur for shot hole fungus and brown rot and the result showed that either may be used. There was no apparent difference in effects of the two sprays. Prof. Eustace warned against use of certain dopes put out by charlatans.

Last on the program came an illustrated lecture on the codlin moth and aphids, by Prof. Pettit. He spoke of the experiments to lengthen out the spraying period for codlin moth from two to ten days, and says an Oregon man now advocates one spray, using coarse nozzle and 220 pounds pressure, throwing the spray in past the calyx bars. Prevalence of plant lice this year was attributed to the cold weather, which held back the parasites which feed on the lice.

Secretary Bassett arranged to have as the closing picture on the screen, that of Prof. Eustace, head of the horticultural department at the college, and paid him a deserved tribute, saying that while he came to Michigan a stranger he has "made good" in every way.

Kent Co. A. GRIFFIN.

Some time ago I wrote a note to the proprietor of a large number of lunch rooms in Chicago and other places, asking him how the wonderful craze for baked-apples got such a start. In his reply to me he made use of a paragraph that ought to interest greatly every fruit raiser in the Wolverine domain.

Here is what he said: "Eastern apples are much better flavored than western apples and we try to get supplied with Michigan apples on account of this. We use about fifteen car-loads of apples a year."

Illinois.

J. L. GRAFF.

Big Profits in Stock Feeding

A tremendous crop this year in the Southwest but not enough hogs or cattle to feed it to, with a high market begging for beef and pork—that is the condition at present. Raising hogs at less than 2c per pound, cheap pastures, cheap fattening grain, millions of acres of forage for the silos, dry winter feed lots—such conditions prevail in the Southwest and stock feeders are growing wealthy. Along

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Prof. H. M. Cottrell, Agricultural Commissioner, has made an exhaustive study of agricultural conditions and knows in just what sections the stock feeder will find conditions best for making money.

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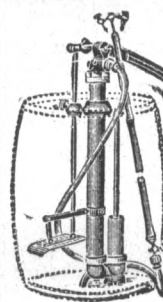
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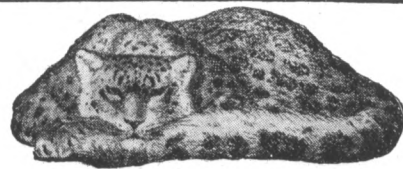


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GRANGE

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

THE GRANGE STRENGTH OF THE "NORTH COUNTRY."

106 Subordinates—32 Permanent Grange Halls—3 1/4 Millions of Patrons' Insurance.

Much has been said of the rapid growth of the Grange in the Upper Peninsula, and yet only those leaders and workers who have been engaged in the organization and extension campaign, so vigorously waged during the past three years, fully realize the strength of the order in that territory. With a view to showing, at a glance, how effective has been that campaign in carrying the Grange banner into almost every part of the peninsula, we have prepared the accompanying map. Upon it are indicated merely the county lines, the railroads traversing that section and the approximate location of the 106 subordinate Granges. Of these subordinates, nearly one-third—32, to be exact—have their own Grange halls, 23 of which have been built within the past two years. These 32 Granges are indicated upon the map by a circle containing an X; the remainder by a solid black dot. Only one of the 15 counties—Keweenaw, at the extreme north—is without a Grange, while Delta leads the remaining 14 counties with a total of 20. Gogebic, with only one, located at Ironwood, claims the largest subordinate in the entire state, boasting a membership of 450, and fire insurance to the extent of half a million.

For the above and other facts contained in this article, as well as for data necessary to the preparation of the map, we are indebted to Bro. R. N. Seward, who, as Deputy State Master for the U. P. district, is in close touch with conditions and in no small degree responsible for the advancement made in the past two years. His statement that patrons' fire insurance is almost universally popular above the Straits and a potent factor in holding Granges together, is borne out by the figures, which show 100 Granges taking advantage of this feature, with 1,933 policy holders and \$3,235,649 of insurance in force on August 1, 1912—three-fourths of a million more than last year and a million and a half gain over 1910. Patrons' life insurance is now claiming some attention and appears to be taking well.

In 11 of the 14 counties the subordinates are aided and encouraged by a good Pomona organization and all have

is growing rapidly there can be no doubt, its membership having doubled in the past two and a half years. Its stability and permanence are apparent from the very large percentage of Grange halls built and owned by the members, and from the strong hold secured through the co-operative, money-saving advantages it offers. Altogether, it is rapidly assuming a commanding position among the forces that are accomplishing so much in the way of developing, agriculturally, this promising region.

REMEMBER STATE GRANGE.

Information just received from the office of State Secretary Hutchins indicates that everything is in readiness for next week's meeting at the "Soo." The sessions will be held in the Armory, the delegates assembling for the opening at 10 a. m. Tuesday. State Grange headquarters will be at the Murray Hill hotel. Rates ranging from \$1.25 to \$2.50 per day have been secured at the various hotels, with ample accommodations in prospect. A reduced round-trip fare from Mackinaw City to Sault Ste. Marie has been arranged for. Lower Michigan patrons can take advantage of this only by purchasing regular tickets to Mackinaw City and there securing the special round-trip ticket to the "Soo." Remember the dates and plan to assist in making this first meeting of the State Grange in the Upper Peninsula a great success.

OCEANA'S WIDE-AWAKE POMONA.

Oceana Pomona held a very enjoyable and profitable meeting Nov. 23 with Crystal Grange. The attendance was better than usual, and the program "a feast of good things." Brother Adams has certainly made good as lecturer during the past year. A very enjoyable feature was an address by Rev. N. F. Jenkins, pastor of one of the largest churches in the county. I speak of this because Bro. Jenkins is one of those ministers who realize their obligations to a large world outside their particular church. He has joined the Grange not to get before the public for the sake of being seen, but as a means of getting in touch with a large and influential class in whose success he has a very great interest. It is our conviction that every minister in a country town should join the Grange if there is one near enough. By so doing he will be able to render valuable service to the community, and will receive, in turn, quite as much as he is able to give. Mingling with only those of our own church or of our own particular circle, we are limited in our possibilities for good in the world, because we are of necessity narrow. In the Grange we meet people of every sort of political and religious creed, and we learn to like the most of them, too. So it happens, after a while, that we come to see that not quite all the brains, and not quite all the religion, are in our church, or our political party. It takes years for some people to learn this, but they will learn it if they keep on mingling pleasantly with those who differ from them in opinion about a few important things.

A year ago we offered a flag to the Grange that would attend Pomona meetings in largest numbers, in proportion to their membership, during the year. It was only a flag, inexpensive, too, but it

together and considered these questions. "I shall pass this way but once. Any good that I can do, let me do it now. Let me not defer it, for I shall not pass this way again." W. F. TAYLOR.

FARMERS' CLUBS

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

Associational Motto.—

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

THE TWENTIETH ANNUAL MEETING.

As we go to press the delegates are assembling for the twentieth annual meeting of the Michigan State Association of Farmers' Clubs. Apparently the same enthusiasm which has been exhibited in previous years prevails with regard to this meeting, and it may be expected to add another to the unbroken line of successful events which have marked the milestones in the history of this organization. Full report of the meeting will appear in future issues of this department, and a still more comprehensive report should be given to each local Club by its delegates at the next regular meeting. Much of value to the local Clubs can thus be gotten from this annual event, a fact of which no local Club member should fail to take advantage.

YEARLY PROGRAMS.

The Essex Farmers' Club of Clinton County.

The fiscal year of this Club begins with the October meeting, hence the program for the year of 1912-13 has recently been published. It is a neat booklet with colored cover, on which appears the name of the Club, the date for which the program serves, the announcement of the date of the meetings, which is on the second Wednesday of each month, and the hour at which the meetings are called to order, which is 10:30 a. m.

The title page is a replica of the cover. On the succeeding page appears a quotation which should make for the cheerfulness of the reader. On the following page appears a list of the ex-presidents of the Club, each of whom held office for two years. Next comes a list of the present officers of the Club and of the standing committees, including the executive committee, program committee, music committee and flower committee.

The homes of the members are named and the farm name appears in connection with that of the host and hostess at the head of the program for each month. The programs are complete, each number being mentioned and assigned to some member. A leading question is discussed at each meeting, and in some cases a second question, or if not another question, a paper, which is open for discussion, fills in the afternoon program, while



A farmer wrote these books!

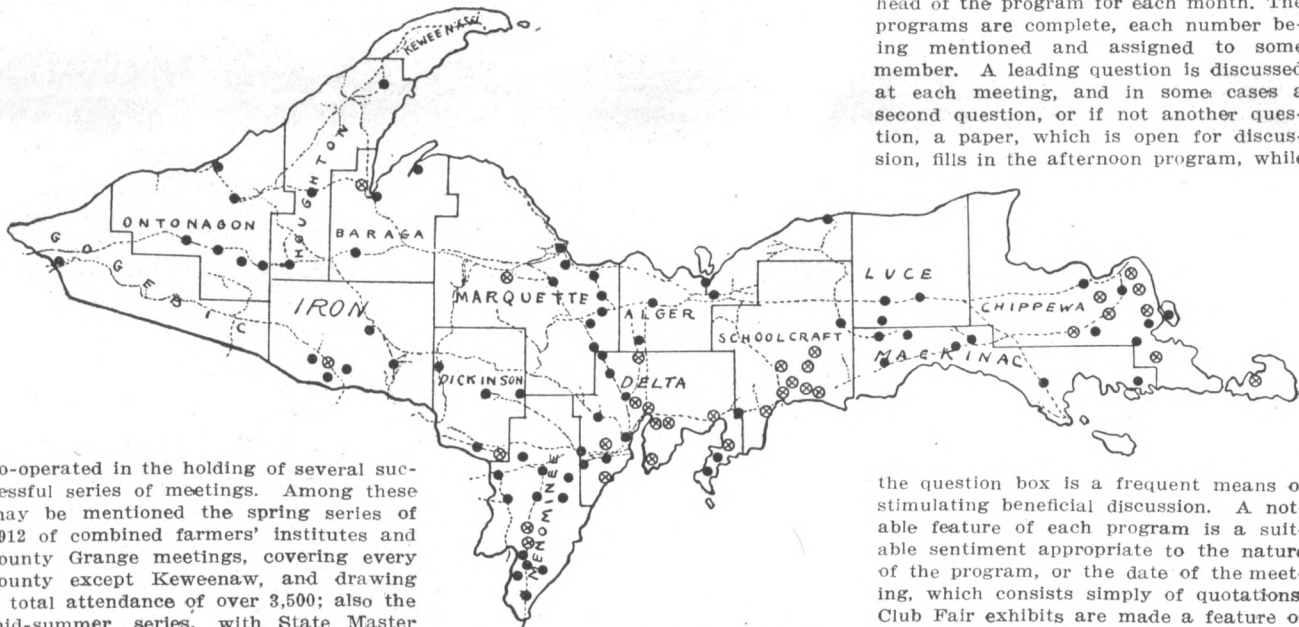
— a man who knows farming from A to Z. He traveled through thousands of square miles of the best sections in Arkansas and Texas, along the Cotton Belt Route; and found out where the real farm opportunities were—the kind that he, knew you would like to hear about.

He doesn't generalize. He comes right down to brass tacks and tells you what Farmer Tull is raising—shows you actual pictures of Farmer Tull's crops, etc.; and tells you what the same kind of land, near Tull's place, would cost you now. He got the personal experiences of scores of farmers in this way; and took actual photos of their places. He points out the best sections for wheat growing, for corn, fruit, truck, etc.—in plain words he sifts the whole situation down to a point where you can say to yourself: "There is the most likely locality for my line of farming—I'll go and investigate." (And with low round trip fares via Cotton Belt Route twice each month your trip will cost mighty little.) Send a postal today for

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of these books—115 farm pictures and 100 pages of farm facts! I know you'll be glad to get them. Write now.

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Grange Map of Upper Peninsula.

106 Subordinates, 32 owning Grange halls indicated by circle containing X.

co-operated in the holding of several successful series of meetings. Among these may be mentioned the spring series of 1912 of combined farmers' institutes and county Grange meetings, covering every county except Keweenaw, and drawing a total attendance of over 3,500; also the mid-summer series, with State Master Hull as speaker, with about the same attendance. The Pomona and subordinates have also played an active part in encouraging and promoting agricultural fairs, several of the past season's fairs having been promoted and conducted entirely by subordinate and Pomona Granges, among these being Cloverland Farmers' fair, at Stephenson, Baraga county fair, at L'Anse, and Pickford fair, at Pickford. In these and other ways it is being demonstrated that the Grange is to prove the greatest factor in bringing about better conditions in the rural communities of this section, as a distinct change in this respect is already noticeable.

From the above it should be clear to all thinking patrons that the Grange is in the Upper Peninsula to stay. That it

increased the interest, and next year we will find something to keep our people thinking about the Pomona Grange. Our worthy master is wide awake, and this tells to our advantage. But we have hardly begun as yet to appreciate the worth and the opportunity of this institution. It is of great importance that the farmer should have some means of making known his opinions upon important questions. It is necessary that we in the country should meet to discuss the matters that lie close to us in our business, and to country life generally, and form wise and helpful public sentiment.

In the strong progressive Pomona Grange the farm, the home, the school and the community all receive their share of attention, and all are stronger and better fitted to serve their purpose because we of the country have gotten

the question box is a frequent means of stimulating beneficial discussion. A notable feature of each program is a suitable sentiment appropriate to the nature of the program, or the date of the meeting, which consists simply of quotations. Club Fair exhibits are made a feature of the October meeting, while the Thanksgiving program is provided for the November meeting and a temperance meeting is held in March.

This Club takes a vacation during July, August and September, so that only nine meetings are provided for in the yearly program. Following the pages devoted to these programs is a list of the departed members and an appropriate quotation in memoriam. Last comes the Constitution of the Club, consisting of but six articles. Altogether, this program is well calculated to not only serve the convenience of the members for reference, but to stimulate an interest in the monthly meetings as they occur from the knowledge which it gives of their character for each month during the active Club season.



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MARKETS

Realizing the importance to our readers of reliable market quotations we spare no trouble or expense to insure the correctness of the quotations in our columns. Special representatives at all leading market centers insure the subscriber accurate market reports, uninfluenced by any factor of trade. All quotations are correct for the dates on which they are made.

DETROIT WHOLESALE MARKETS.

December 4, 1912.

Grains and Seeds.

Wheat.—The wheat market appears to be following regular channels. Prices do not vary much from those reported a week ago. Although general conditions in this country are bearish, strength was afforded the market by the small increase in the visible supply. Dealers appear to have lost sight of the large amount of wheat going abroad. Millers are also taking cash wheat for their purposes, there being an active demand for flour at the present time. Political events in Europe have become of less import to the trade, although on Tuesday news to the effect that Greece had dissented from the proposed terms of peace between Turkey and the allied nations, gave strength to the market. Europe is also bidding for cargoes, and while crop conditions in South America and Australia are favorable for the new crop, quotations there appear to be firm. One year ago No. 2 red wheat was selling on the Detroit market at 95¢ per bu. Quotations are as follows:

	No. 2 Red.	No. 1 White.	Dec.	May.
Thursday	1.06	1.06	1.11	
Friday	1.06	1.05	1.11	
Saturday	1.06	1.05	1.11	
Monday	1.05½	1.04½	1.05½	1.10½
Tuesday	1.05½	1.04½	1.05½	1.10½
Wednesday	1.05½	1.04½	1.05½	1.10½

Corn.—There is an easy feeling in corn circles. The quotations given below are on the basis of new corn and cannot well be compared with those published heretofore which represent quotations on old corn. However, prices are sliding downward, deliveries of corn at primary elevators are increasing. There is, however, a good country demand for corn and shipments from primary stations are comparatively slow. Detroit market is dull with offerings scarce. One year ago No. 3 corn was selling at 62½¢ per bu. Quotations for the week are:

	No. 3 Corn.	No. 3 Yellow.
Thursday	49½	50½
Friday	49½	50½
Saturday	49	50
Monday	49	50
Tuesday	49	50
Wednesday	49	50

Oats.—This market shows improvement. Prices rule about one cent higher than a week ago. The strength of the market depends almost entirely upon its own merit, the demand and supply largely affecting the change upward. Standard oats a year ago were quoted at 50¢ per bushel. Quotations for the week are as follows:

	Standard.	Oct.
Thursday	35	34
Friday	35	34
Saturday	35	34
Monday	35	34
Tuesday	35	34
Wednesday	35½	35½

Beans.—An easy tone prevails in the bean trade. But few contracts are made on the local market. Cash prices were off last Tuesday. From this date forward a better class of beans will be offered the trade as the poorer grades are usually marketed early. The following quotations are largely nominal:

	Cash.	Dec.
Thursday	2.30	2.25
Friday	2.30	2.25
Saturday	2.30	2.25
Monday	2.30	2.25
Tuesday	2.28	2.20
Wednesday	2.28	2.20

Clover Seed.—The closing figures of a week ago are maintained with clover seed in active demand and limited supplies. Nearly all the transactions here are on a small scale. The leading quotations are:

	Cash.	Dec.
Thursday	11.00	13.00
Friday	11.00	13.00
Saturday	11.00	13.00
Monday	11.00	13.00
Tuesday	11.00	13.00
Wednesday	11.00	13.00

Rye.—This deal is easy and dull with the quotations marked down 2c from last rather poor in quality. No. 2 rye is now week's reduced prices. Offerings are quoted at 61c per bushel.

Flour, Feed, Potatoes, Etc.
Flour.—The market is active with all grades steady.
Straight \$5.20
Patent Michigan 5.60
Clear 4.90
Rye 4.80

Feed.—Steady. Carlot prices on the track are: Bran, \$23 per ton; coarse middlings, \$24; fine middlings, \$29; cracked corn and coarse corn meal \$29; corn and oat chop, \$22 per ton.

Hay and Straw.—Supply has increased and prices show a slight easing off, being about 50c lower except for wheat and oat straw. Quotations: No. 1 timothy, \$16@16.50; No. 2 timothy, \$14.50@15; clover, mixed, \$14@15.50; rye straw, \$10.50 @11; wheat and oat straw, \$9@10 per ton.

Potatoes.—Although the potato trade was interrupted by the holiday last week, the general trend of the market is about

steady with a better class of goods offered. Michigan stock is coming into demand in the east because of its quality. Local prices for car lots on track are 53c in sacks and 48c in bulk.

Provisions.—Family pork, \$23@24; mess pork, \$19; clear, backs, \$22@24; hams, 16½@17½c; briskets, 11½@12c; shoulders 14½c; picnic hams, 14c; bacon, 18@20c; pure lard in tierces, 12½c; kettle rendered lard, 12½c per lb.

Dairy and Poultry Products.

Butter.—The markets all over the country show a shortage in the supply of butter. Even though prices were advanced considerably above present quotations receipts could not be increased because supplies cannot be secured. On the local market creamery butter advanced 1c. The market is strong at the new quotation. Quotations are: Fancy creamery, 36c; first creamery, 33c; dairy, 22c; packing stock, 21c per lb.

Eggs.—The trade is firm. There is a great scarcity of strictly fresh eggs with an unusually strong demand for same. Storage eggs are moving freely. Fresh receipts, candled, cases included, are quoted at 30c per dozen, the price of a week ago.

Poultry.—The usual slump that follows the Thanksgiving holiday is not in evidence. There is a good supply, mostly of live stuff, but some kinds are quoted higher. The weather has been unfavorable for dressed stock which is ruling steady. Quotations: Live—Springs, 12 @13c per lb; hens, 11@11½c; No. 2 hens, 9c; old roosters, 9@10c; turkeys, 17@19c; geese, 13@14c; ducks, 15@16c per pound. Dressed—Hens, 12@14c; springs, 13@15c; ducks, 17@18c; geese, 13@14c; turkeys, 21@22c per lb.

Veal.—Steady. Fancy, 12@13c per lb; choice, 10@11c.

Cheese.—Michigan flats, 16½@17c; York state flats, 18½@19c; limburger, 17½@18½c; brick cream, 17½@18c; domestic Swiss, 21@22c.

Fruits and Vegetables.

Apples.—The market continues about steady. Liberal offerings are coming to the large markets so that scarcely no reduction in stocks is noted. The demand shows some improvement but is not expected to be good until after the first of the year. At Detroit Baldwins are quoted at \$2.25@2.50; Greenings, \$2.50@2.75; Steele Red, \$3@3.50; Spy, \$2.75@3.

Honey.—Steady. Choice to fancy comb 16@17c per lb; amber, 14@15c; extracted, 9½@10c.

Onions.—Higher. Per bu., 55c.
Cabbage.—\$1@1.25 per bbl.

OTHER MARKETS.

Grand Rapids.

Local dealers are paying the country shippers 28c for No. 1 dairy butter and 30c for fresh eggs. The bean market is quiet, December being a slow month as a rule. The price paid farmers for both white beans and red kidneys is on the \$1.90 basis. The mills are paying \$1.06 for wheat, 34c for oats and 51c for new corn. Dressed hogs are worth 9@9½c. Live poultry quotations are as follows: Hens, 10c; ducks, 10c; geese, 8c; turkeys 15c; guineas, 20c apiece. The hay market is steady at \$12@16.

Chicago.

Wheat.—No. 2 red 99c@1.01; Dec. 84c; May, 90c.

Corn.—No. 3 old, 48½c; new, 46½c; Dec., 48½c; May, 48½c.

Oats.—No. 2 white, 34@34½c; Dec., 31½c; May, 32½c.

Butter.—Market firm. Receipts are slightly less than the small offerings of a week ago and only about two-thirds of last year's offerings for corresponding week. Demand good. Extra creamery in light supply and 2c higher, being quoted at 36½c; extra firsts, grading 90 or better, in good demand at 34c; firsts in fair demand at 32c; seconds moving well, owing to light offerings, at 28c. Dairies in moderate supply and meeting a fair demand at 31c for extras, 28c for firsts and 26c for seconds.

Eggs.—Trade is about steady. Strictly fresh offerings are higher and in excellent demand; other kinds are moving slower at former values. Storage goods show fractional advance. Quotations are: Firsts, 27½c; ordinary firsts, 24c; at mark, cases included, 22@25c; storage, 20½@21½c per dozen.

Poultry.—Trade easy since holiday. Fowls and chickens in fair demand; other kinds are not given much attention and prices are shaded, except for ducks. Now quoted as follows: Fowls, 12c per lb; springs, 12c; ducks, 12@13c; geese, 12c; turkeys, 10@13c.

Potatoes.—Deal shows easier feeling. Only fancy stock selling up to last week's values. Bulk of offerings 2c lower. Quotations: Michigan, 50@53c per bu; Minnesota, 45@50c; Wisconsin, 45@50c.

Beans.—Little doing in this market. Prices steady, except kidneys are 5c higher. Quotations are: Pea beans, choice, hand-picked, \$2.55@2.65 per bu; prime, \$2.45@2.50; red kidneys, \$2.30@2.40.

Hay and Straw.—Demand fair and offerings smaller. Quotations: Timothy, choice, \$18.50@19.50; No. 1, \$16@17.50; No. 2 and No. 1 mixed, \$14@15; clover, \$7@12. Straw—Rye, \$8@8.50; wheat, \$6@6.50; oat, \$7@7.50.

New York.

Butter.—All grades of creamery butter are firm at advanced figures. Demand steady and receipts lighter. Quotations: Extra creamery, 37½@38c; first creamery, 33½@36½c; seconds, 30@32½c; process extra, 27½@28c per lb.

Eggs.—Shrinkage of receipts is forcing a firmer trade and higher prices for fresh eggs; while the trade in storage is not as satisfactory as it might be, the holdings being large and quality inferior. Fresh gathered extras are quoted at 39@42c per dozen; extra firsts, 35@38c; western gathered whites, 33@42c.

Poultry.—Dressed—Chickens and fowls are about steady to higher with values

for turkeys lower. Fresh killed western chickens are quoted at 11@19c; fowls, 12½@16½c; turkeys, 8@21c. Live—steady; western chickens, 13@14c; fowls, 13@14c; turkeys, 18c per lb.

Elgin.

Butter.—Market firm at 35½c per lb., which is an advance of 1½c over last week's quotation.

THE LIVE STOCK MARKETS.

Buffalo.

December 2, 1912.

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

Receipts of stock here today as follows: Cattle, 245 cars; hogs, 125 double decks; sheep and lambs, 100 double decks; calves 800 head.

With 245 cars of cattle on our market here today and 35,000 reported in Chicago, notwithstanding a constant downpour of rain here all day long, market generally was from 10@15c higher all around, and about everything was cleaned up that was yarded in time for market.

We quote: Best 1,350 to 1,500-lb. steers \$8.75@9.25; good to prime 1,200 to 1,300-lb. do., \$7.85@8.50; good to prime 1,100 to 1,200-lb. do., \$7.50@7.85; coarse, plain, 1,100 to 1,200-lb. steers, \$7@7.25; medium butcher steers, 1,000 to 1,100, \$6.50@7; butcher steers, 950 to 1,000, \$6.25@6.75; light butcher steers, \$5.75@6.25; best fat cows, \$6@6.50; butcher cows, \$5@5.50; light butcher cows, \$4@4.25; cutters, \$3.50 @4; trimmers, \$3.40@3.50; best fat heifers, \$6.75@7.50; medium butcher heifers, \$5.50@6; light do., \$4.50@5.10; stock heifers, \$4@4.25; best feeding steers, dehorned, \$6.50@7; fair to good stockers, \$5.25@5.50; light common stockers, \$4.50 @4.75; prime export bulls, \$6@6.25; best butcher bulls, \$5.50@5.75; bologna bulls, \$4.50@5; stock bulls, \$4.50@5; best milkers and springers, \$6.50@7.50; common to fair kind, \$4@5.00.

With 125 loads of hogs here today, we had a slightly lower market, but the trade was active and a good clearance was made; general sales of yorkers and mixed was at \$7.75, with some closely sorted lots of medium weights at \$7.80; pigs and lights at \$7.70@7.75; roughs, \$6.75@7; stags, \$6@6.50. Chicago had a very heavy run today, and their closing market was bad; prospects are not any too bright for the next few days.

The sheep and lamb market was fairly active today, with prices a quarter higher than the close of last week; most of the choice lambs selling for 8c. Yearlings, \$4.50@5.75. Look for little lower prices the balance of the week.

We quote: Choice lambs, \$7.90@8; cull to fair do., \$5.50@7.75; yearlings, \$4.50@5.75; bucks, \$2.50@3; wethers, \$4.25@4.75; handy ewes, \$3.75@4; heavy do., \$3.75@3.85; cull sheep, \$2@3; veals, choice to extra, \$11@11.50; fair to good, \$7.50@10.50; heavy calves, \$4.50@6.

Chicago.

December 2, 1912.

Received today 32,000 53,000 45,000
Same day last year 27,658 43,161 42,151
Received last week 48,560 152,158 131,523
Same week last year 52,970 137,646 89,454

Cattle open the week with too generous offerings, the general demand being slow, and at a late hour not much trading had been accomplished, prices being reported as anywhere from 10@25c lower. Hogs are off 5@10c, with fair animation at \$7.20@7.75. Hogs marketed last week averaged 228 lbs., compared with 224 lbs. a week earlier, 211 lbs. a year ago and 232 lbs. two years ago. Sheep and lambs sold actively at steady prices. A consignment of prime lambs intended for the stock show brought \$8 per 100 lbs., and a sale was made of ten head of fancy black steers that averaged 1,236 lbs. that were intended for the show at \$12.

Cattle were not marketed so freely last week because of the fear of country shippers that supplies would be heavy enough to cause a smash-up in values that the contrary thing actually occurred. While Thanksgiving week is never a time for large demand, the small offerings caused advances in prices of around 25c all along the line, and the recent large decline was fully recovered, \$11.00 beeves being seen once more. The great bulk of the steer sales took place at \$7.25 @9.75, with a very fair showing of choicer beeves at \$9.80@11, while the poorer to pretty good grass-fed steers brought \$5.80@7.75. Better steers that had been fed for short periods found buyers at \$7.80@8.60, and any cattle that were good sold as high as \$9, with sales of desirable yearlings at \$8.75@10.75. Butchering and cheaper classes of cattle shared in the upward movement, cows and heifers going at \$4.45@8.60, with cutters taken at \$3.90@4.40, canners at \$2.75 @3.85 and bulls at \$3.90@7.25. The market for stockers and feeders was decidedly higher under moderate offerings, with feeders selling for \$6@7.75 and stockers at \$4.50@6.75, and no desirable offerings selling for less than \$5. Calves had a fair sale for a holiday week at \$4@10.50 per 100 lbs., while milkers and springers sold fairly at \$4@11.50 per head, a fancy Holstein springer fetching \$115.

Hogs sold as well as could have been expected in a week broken by a holiday, prices undergoing the usual fluctuations, with no considerable eastern shipping demand. Prime heavy barrows sell highest of anything, with prime light hogs at a discount of 10c. The close of the week saw hogs sell at \$7.25@7.82½, a little lower range of prices than a week earlier, while pigs went at \$5.25@7.25. Sheep and lambs made a great record last week, with sharp advances in prices for all desirable offerings, because of smaller offerings and competition between buyers. The close saw lambs ed. The close of the week saw lambs selling at \$5@7.75, yearlings at \$5@6.35, wethers at \$3.50@4.65, ewes at \$2.50@4.10 and bucks at \$3@3.50. Feeders bought lambs at \$6@6.80, wethers at \$3.50 @4.25 and yearlings at \$4.65@5.15.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

December 5, 1912.

Cattle.

Receipts, 1,728. Canners and cutters 10 @15c lower; all other grades active at last week's prices.

We quote: Extra dry-fed steers, \$7.50 @8; steers and heifers, 1,000 to 1,200, \$6.50@7.25; do. 800 to 1,000, \$5.50@6; do. that are fat, 500 to 700, \$4.50@5; choice fat cows, \$5.50@5.75; good fat cows, \$4.50 @4.75; common cows, \$3.75@4; canners, \$3@3.35; choice heavy bulls, \$5.50; fair to good bolognas, bulls, \$4.75@5; stock bulls \$3.75@4.50; choice feeding steers, 800 to 1,000, \$5.50@6.25; fair do., 800 to 1,000, \$5.25@5.50; choice stockers, 500 to 700, \$5@5.50; fair stockers, 500 to 700, \$4.50@4.75; stock heifers, \$3.50@4.25; milkers, large, young, medium age, \$4@65; common milkers, \$3@35.

Bishop, B. & H. sold Mich. B. Co. 25 butchers av 790 at \$5.75, 1 cow weighing 1,340 at \$4.75; to Bresnahan 2 do av 1,000 at \$4.50, 4 do av 760 at \$3.50, 11 do av 920 at \$3.75, 1 do weighing 820 at \$3.25, 1 do weighing 1,000 at \$3.50; to Sullivan P. Co. 2 bulls av 580 at \$4.50, 2 do av 555 at \$4.25, 17 butchers av 580 at \$5, 13 do av 664 at \$5.25; to Jerome 1 steer weighing 650 at \$5, 2 stockers av 680 at \$5.25, 1 cow weighing 880 at \$4; to Parker, W. & Co. 4 do av 1,130 at \$4.25, 10 butchers av 627 at \$4.75, 3 cows av 897 at \$3.75, 24 steers av 983 at \$6.75, 29 do av 921 at \$3.85, 4 do av 985 at \$3.75, 12 butchers av 682 at \$5.35, 9 do av 606 at \$4.75, 7 cows av 910 at \$3.75, 9 do av 1,014 at \$4, 1 bull weighing 1,000 at \$5, 4 cows av 950 at \$3.75; to Kimball 6 stockers av 690 at \$5.60, 2 do av 590 at \$5; to Hammond, S. & Co. 11 butchers av 606 at \$4.75, 5 cows av 860 at \$3.60, 1 bull weighing 1,060 at \$5; to Goose 9 butchers av 980 at \$4.50; to Fromm 5 do av 744 at \$4.40, 6 do av 916 at \$4; to Cooke 3 do av 733 at \$5.80.

Spicer & R. sold McBride 18 stockers av 593 at \$5; to Sullivan P. Co. 21 butchers av 820 at \$5, 4 do av 455 at \$4.50, 2 cows av 935 at \$5, 2 steers av 1,005 at \$7, 2 do av 800 at \$4.75; to Bresnahan 8 cows av 762 at \$3.50, 14 butchers av 400 at \$4.25, 3 cows av 1,013 at \$3.65, 4 do av 895 at \$3.65, 4 bulls av 670 at \$4.25, 11 cows av 852 at \$3.50, 4 stockers av 575 at \$4.65, 2 do av 665 at \$4.25; to Nagle P. Co. 6 cows av 1,148 at \$4.50, 4 do av 990 at \$4.60; to Hammond, S. & Co. 3 do av 1,070 at \$4.25; to Bray 1 do weighing 850 at \$3.60, 1 do weighing 750 at \$3.25; to Bresnahan 3 do av 990 at \$3.60, 4 heifers av 630 at \$5.25, 2 do av 550 at \$4.50, 3 cows av 863 at \$3.60; to Thompson Bros. 4 do av 1,105 at \$4.60; to Kamman B. Co. 7 butchers av 650 at \$5.20; to Mich. B. Co. 2 heifers av 800 at \$5.50, 1 cow weighing 1,080 at \$5, 1 do weighing 940 at \$4.50.

Haley & M. sold Bresnahan 6 heifers av 447 at \$4.35, 4 cows av 912 at \$3.60, 4 do av 892 at \$3.60, 2 do av 850 at \$3.60, 10 do av 824 at \$3.50, 7 do av 830 at \$3.50; to Sullivan P. Co. 1 bull weighing 940 at \$4.75, 17 butchers av 605 at \$4.75, 16 do av 840 at \$5.75, 9 do av 633 at \$4.90, 1 heifer weighing 1,220 at \$5.90, 8 butchers av 591 at \$4.75, 6 do av 880 at \$5.65; to Mason B. Co. 14 cows av 953 at \$4; to Nagle P. Co. 6 do av 1,071 at \$4.40; to Hammond, S. & Co. 5 butchers av 856 at \$5, 2 do av 550 at \$4.50; to Saparo 13 cows av 911 at \$4; to Breitenbeck 6 do av 961 at \$3.85, 4 do av 927 at \$3.80, 7 do av 1,053 at \$4.25.

Roe Com. Co. sold Bray 1 cow weighing 940 at \$3.75, 2 heifers av 675 at \$3.50; to Hammond, S. & Co. 7 butchers av 923 at \$5.15; to Wyness 4 cows av 1,030 at \$4.40; to Sullivan P. Co. 4 butchers av 682 at \$4.90.

Veal Calves.

Receipts, 319. Market active and 50c higher than last week. Best, \$9.75@11; others, \$4@8.75; milch cows and springers slow.

Bishop, B. & H. sold Parker, W. & Co. 5 av 150 at \$10.50, 3 av 155 at \$10, 9 av 130 at \$9.50, 6 av 150 at \$10.50, 4 av 145 at \$11, 2 av 150 at \$9; to Hammond, S. & Co. 4 av 127 at \$9, 5 av 160 at \$11, 4 av 140 at \$9.50, 1 weighing 190 at \$11; to Parker, W. & Co. 2 av 140 at \$11, 1 weighing 150 at \$8, 1 weighing 150 at \$11, 2 av 130 at \$11, 3 av 155 at \$10.50, 1 weighing 200 at \$11, 3 av 120 at \$8, 8 av 145 at \$10.50; to McGuire 2 av 150 at \$11, 9 av 150 at \$11, 2 av 110 at \$8, 8 av 150 at \$11; to Goose 6 av 225 at \$4.25, 1 weighing 130 at \$9.

Haley & M. sold Newton B. Co. 1 weighing 260 at \$7, 5 av 145 at \$9, 2 av 150 at \$8; to Sullivan P. Co. 11 av 145 at \$10.50, 2 av 135 at \$9; to Goose 3 av 225 at \$4.50.

Sharp sold Mich. B. Co. 22 av 145 at \$9.25.

Spicer & R. sold Sullivan P. Co. 1 weighing 220 at \$10.50, 2 av 160 at \$9.50; to Burnstine 2 av 370 at \$7, 1 weighing 110 at \$10, 2 av 350 at \$5.25; to Ratkowski 1 weighing 110 at \$7; to Burnstine 1 weighing 140 at \$10.

Roe Com. Co. sold Sullivan P. Co. 3 av 145 at \$10; to Thompson Bros. 6 av 150 at \$9.50.

Sheep and Lambs.

Receipts, 6,216. Lambs 25@35c higher than last week; sheep steady. Best lambs, \$7@7.25; fair to good lambs, \$6.50 @7; light to common lambs, \$5@6; yearlings, \$4.50@5.50; fair to good sheep, \$3.25 @3.75; culls and common, \$2.25@2.75.

Spicer & R. sold Hayes 40 sheep av 80 at \$3.25; to Mich. B. Co. 40 lambs av 50 at \$5.75; to Breitenbeck 21 do av 55 at

\$5.75; to Nagle P. Co. 114 do av 65 at \$6.65, 21 sheep av 105 at \$3.50, 6 do av 90 at \$2, 133 lambs av 75 at \$7; to Mich. B. Co. 116 do av 55 at \$5.75; to Hammond, S. & Co. 16 yearlings av 90 at \$4.50; to Thompson Bros. 32 sheep av 110 at \$3.50, 5 do av 90 at \$2; to Costello 6 do av 75 at \$2.50, 31 do av 80 at \$3.65.

Roe Com. Co. sold Thompson Bros. 18 sheep av 55 at \$3, 6 do av 80 at \$2.50, 42 lambs av 60 at \$6.50; to Nagle P. Co. 53 sheep av 95 at \$3.50; to Mich. B. Co. 14 lambs av 55 at \$5.50; to Breitenbeck 38 do av 70 at \$6.60.

Sharp sold Mich. B. Co. 33 sheep av 95 at \$3.50, 56 lambs av 65 at \$6.50.

Haley & M. sold Nagle P. Co. 79 lambs av 75 at \$7; to Newton B. Co. 13 do av 45 at \$5, 68 do av 65 at \$6.75, 35 sheep av 90 at \$3, 5 lambs av 60 at \$6.50.

Bishop, B. & H. sold Sullivan P. Co. 31 sheep av 105 at \$3, 22 do av 100 at \$3.25, 13 do av 105 at \$3.25, 6 lambs av 65 at \$6.50, 12 do av 55 at \$5.50, 29 do av 60 at \$6; to Parker, W. & Co. 77 do av 85 at \$7, 55 do av 75 at \$7.25; to Thompson Bros. 21 do av 60 at \$6, 8 do av 65 at \$6; to Hayes 35 sheep av 75 at \$3.25; to Nagle P. Co. 106 do av 110 at \$3.50, 34 do av 90 at \$2.25; to Costello 36 do av 55 at \$5.50; to Hammond, S. & Co. 36 lambs av 70 at \$7, 8 do av 70 at \$7, 28 do av 50 at \$5.50; to Young 44 do av 70 at \$6; to Sullivan P. Co. 11 sheep av 95 at \$2.25, 13 do av 85 at \$2.25; to Gleason 205 do av 80 at \$3; to Nagle P. Co. 36 lambs av 75 at \$6.75, 64 sheep av 90 at \$3.25, 92 do av 110 at \$3.50, 41 do av 80 at \$2.50; to Bush 42 do av 105 at \$3.50, 53 do av 90 at \$3.50; to Young 44 lambs av 70 at \$6; to Sullivan P. Co. 49 do av 50 at \$5.60; to Thompson Bros. 44 yearlings av 80 at \$4.50.

Hogs.

Receipts, 4,415. Market steady to 5c lower than last week.

Range of prices: Light to good butchers, \$7.50@7.60; pigs, \$6.75@6.90; light yorkers, \$7.25@7.35; stags one-third off.

Haley & M. sold Parker, W. & Co. 250 av 200 at \$7.50, 440 av 190 at \$7.40, 30 av 175 at \$7.35, 210 av 160 at \$7.30, 150 av 150 at \$7.25.

Spicer & R. sold same 200 av 195 at \$7.50, 310 av 190 at \$7.40, 160 av 175 at \$7.35.

Roe Com. Co. sold Sullivan P. Co. 385 av 200 at \$7.50, 150 av 160 at \$7.25.

Bishop, B. & H. sold Hammond, S. & Co. 1,500 av 190 at \$7.50, 510 av 220 at \$7.60, 500 av 170 at \$7.45, 1,010 av 170 at \$7.40, 100 av 150 at \$7.30, 110 av 160 at \$7.35.

The production of eggs at this season of the year is greatly inadequate for current consumption, and prices have advanced to a point that is almost prohibitory to thousands of families. At the present time cold storage eggs are largely substituted by retail grocers for fresh laid eggs and palmed off on their customers as fresh lots. "It is a well-known fact among dealers," declared Paul Mandeville, president of the Northern Egg Company, "that eggs on the market during the winter months are mostly April eggs. Fresh eggs during the cold months are about five per cent of the normal supply. These are given over to private consumption and never reach the open market. It is a shame that retail dealers are allowed to sell cold-storage eggs for exorbitant prices by representing them to be freshly laid."

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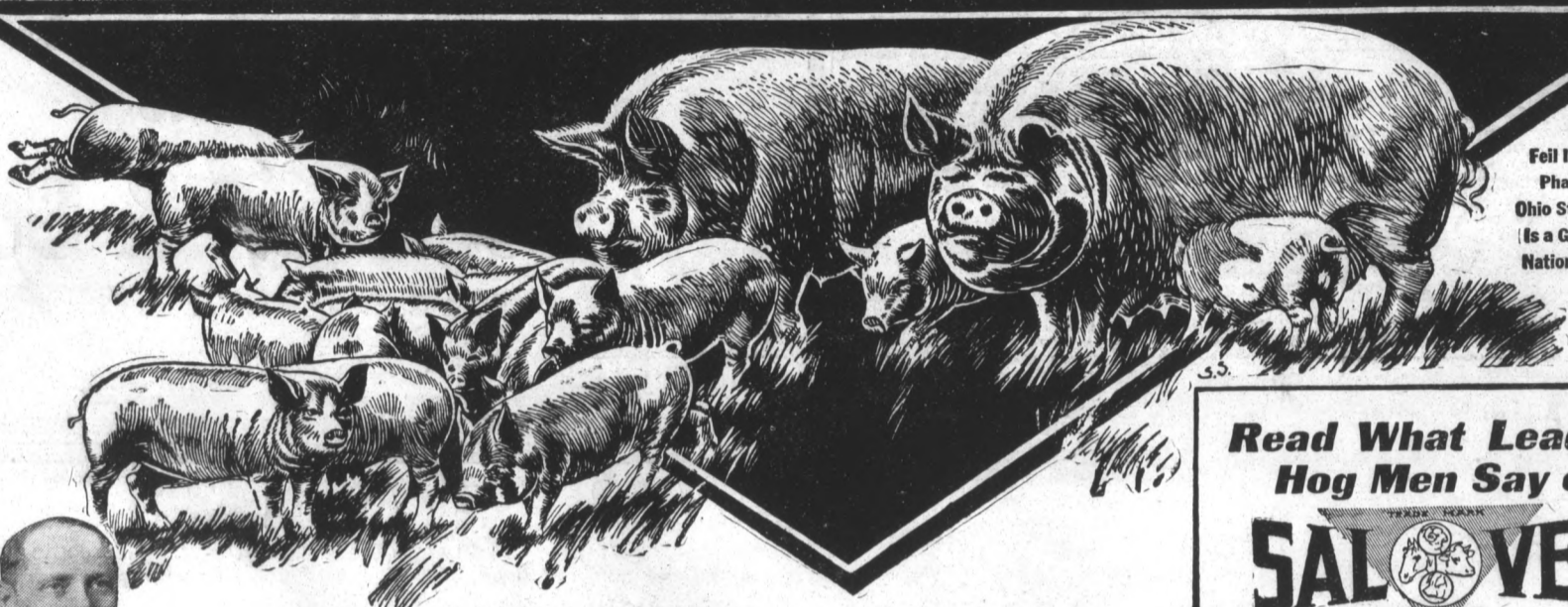
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and *prove it to your satisfaction* (not mine) *before you pay me a cent*. I do not claim Sal-Vet is a cure-all, but simply a positive *destroyer of Stomach and free intestinal worms* which are the cause of 90% of *diseases* among stock and also the cause of stock failing to thrive as they should. Get rid of the worms and your troubles and losses will vanish; your stock will thrive better; you'll save on feed, you'll get better profits and raise far better stock. Sal-Vet will do it and I stand ready to *prove it before you pay me a cent*.

Send No Money—Just the Coupon

Here is my offer: Simply fill in the coupon, tell me how many head of hogs, sheep, horses and cattle you have. I will then ship you enough Sal-Vet to last them 60 days. - You pay the small freight charge when it arrives. Put it where all your stock can get free access to it and *they will doctor themselves*. They eat it as they do salt—just as they need it, and at the end of 60 days if you don't feel *satisfied*, write me and I'll cancel the charge. How can you risk loss; how can you let your stock drag along when they should be thriving; growing into profit when a fair, open offer like this is at your disposal? You have all to gain, nothing to risk. Fill out and mail the coupon *now*. Don't put it off, lest you forget.

Here's My Personal Guarantee—Read It!

I personally guarantee this generous, open-handed offer right down to the very last word. - I stand back of it every single day. I'd like to have you address your letters to me personally.

SIDNEY R. FEIL, Pres.

THE S. R. FEIL CO., Dept. MF, Cleveland, Ohio

60-day trial shipments are based on 1 lb. of Sal-Vet for each hog and sheep, and 4 lbs. for each horse and head of cattle, as near as we can come without breaking regular packages.

PRICES: 40 pounds \$2.25, 100 pounds \$5.00, 200 pounds \$9.00, 300 pounds \$13.00, 500 pounds \$21.12. Sal-Vet always comes in original 'Trade Mark' Packages. - Never sold loose, in bulk, or pound. Look for this trade-mark. It is your protection against imitations and substitutes.



Read What Leading Hog Men Say of



I want you to know what SAL-VET really has done, is doing, and why I can positively guarantee what it will do for you. Read these letters. I have thousands like them, not only from hog raisers, but sheep men, horsemen and cattle owners—all equally enthusiastic over the surprising results SAL-VET produces.

"Your SAL-VET sure does all you claim for it. We have been feeding it right along and never saw hogs and pigs do so well. It sure gets rid of worms. The animals seemed to grow faster and fatten better. Lots of hogs died around here from cholera but my hogs never took it. I believe it was because of feeding them SAL-VET all the time."

O. M. Van Osdel, Nashville, Okla.

"One \$5 order of SAL-VET has been worth \$50 to me. It relieved my hogs of worms by the hundreds and they have gone through the winter on less feed and look better than I ever had hogs do before. My horses and cattle have done fine, too. I have used many preparations but none so good as SAL-VET."

Chas. F. Hilton, Jonesboro, Tenn.

"I have tested your SAL-VET thoroughly and must say that it is without doubt the best remedy for hogs that I ever saw. At the time I got it, my sows and pigs were in very bad condition. They looked rough, would scarcely eat and began to die. I had lost three thoroughbred Berkshire pigs. Then I commenced feeding SAL-VET as directed, and the results have been most gratifying. Their coats have become sleek and glossy, their skins soft, they eat all I give them and are making better returns in weight than ever before."

J. P. Hunter, Gieger, Ala.

"I did not for a minute expect such results as I obtained from your SAL-VET. It expelled more worms from my hogs than it would take to fill the keg it came in. I will order more soon for it is a great preparation."

Geo. B. Coffinbarger, Shepherdstown, W. Va.

"When I received your SAL-VET my hogs were very unthrifty—but they did not stay that way long after feeding SAL-VET. I never had pigs do so well. They were soon in top condition. My horses also improved on it fine. It sure does get rid of the worms. Please send me another barrel at once."

D. P. Copp, Carrol, Iowa.

"My experience feeding SAL-VET to hogs has been so satisfactory that I cannot recommend it too highly. This year, up to the 1st of June, we lost twenty head of young hogs. They were killed by worms. I tried all the remedies known down here, but every one of them failed. Finally I ordered some of your SAL-VET and began feeding it about the 9th of June."

I tell you gentlemen, I have never in my life seen such a variety of such great numbers of worms as those passed from these hogs. Furthermore, we have not lost a single hog since they have had access to your SAL-VET. I really cannot see how any stockman can afford to do without this wonderful remedy."

Ross C. Abington, Mgr., Durin Plantations, Durin, La.

"While I cannot state positively SAL-VET kept my hogs from having cholera, I had no such sickness, while my neighbors' almost without exception lost hogs from cholera. I certainly have great faith in SAL-VET and it is all and more than you claim for it."

J. C. Conover, Chrisman, Ill.

"I had a lot of sick hogs and I lost five of them. I began feeding them SAL-VET, my losses stopped and the hogs soon got into a fine, healthy condition."

"SAL-VET did the same for my sheep and horses and several of my neighbors have had the same experience with it."

V. P. Underwood, Roachdale, Ind.

Sidney R. Feil, Pres. The S. R. Feil Co., Cleveland, O.
Name _____
P. O. _____
Shipping Sta. _____
Number of Hogs _____
Number of Sheep _____
Cattle _____
Horses _____
State _____
I will pay the freight charges when it arrives. If it does not, you are to cancel the charges.