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Building Up the Rented Farm

ONE of the most important factors connected with the betterment of country life, is that of working out a profitable system of farm tenantry that provides for the maintenance as well as the improvement of soil fertility. Such a system should provide for the welfare of the tenant, give him all the opportunities and privileges calculated to inspire his best endeavors and insure him a fair reward. Experience has proved that as farms have been raised to a higher basis of profits the tenants have prospered.

It takes two men to develop a better system of farm tenantry—the landowner and the tenant. The part each plays and his interest in the undertaking should be clearly understood; their interests are identical. The landowner who takes no interest in the management of his farm, aside from collecting the rent and paying the taxes, will never be able to develop a permanently profitable system of farm tenantry. In the first place he must understand the principles of constructive farming and put the farm in condition so that these principles may be put into successful operation. The size of the farm, the proportion of cultivated land to meadows and pastures, the buildings and conveniences, and the size of the fields should be considered in adopting a profitable system of farming. After such a system has once been established a form of lease should be drawn that will provide for its permanent adoption. Tenants under the usual form of farm leases have little if any interest in common with the land-owner. To rob the farm and get away with big crops is their paramount object. They do not seek permanence because they are nomadic in their habits, and the terms of most farm leases make it im-

possible for them to realize any of the larger rewards which a sound tenant system guarantees to the right kind of men.

Permanence a Factor.

The tenant should take an active interest in developing a system of farming which will pay fair profits and leave the farm in as good condition as it was at the beginning of the lease. This, of course, will necessitate a long lease, or better still, an assurance that he may stay on the farm so long as he makes the most of his opportunities and measures up to the reasonable requirements imposed by the landowner who is anxious to hold his farm up to a high level of production. Men who desire a home where they can make money and provide for their families, will find that a sound system of tenantry, in which the owner is equally anxious to have them stay, offers such an opportunity. What is best for the tenant is best for the landowner. This is the basic principle upon which the ideal farm lease is founded.

The Size of the Business.

In many cases the landowner can make his farm a better renting proposition by buying more land. For example, the writer, having more or less business aside from the general farm and dairy work, kept about 36 cows on 80 acres of land. This necessitated the keeping of two men and five work horses, and since the whole of the land was devoted to corn, small grain and hay, there was no further work for the men and teams after the crops and cows were cared for. The system worked very well because the men and teams could be used on the other farm when not needed on the home farm. But with the tenant it was an entirely different proposition. The lesson was plain, and after listening to

the tenant's side of the case, the writer lost no time in buying an adjoining 56 acres. Now, with the 136 acres the tenants raise from 20 to 25 acres of potatoes without hiring much additional labor, and the labor charges and team work formerly paid by the dairy end of the business have been reduced more than 30 per cent. Under this system of dairying and potato growing the tenant works his men and teams about 150 days on the farm during the year. There are several months of idle time at best, however, we have met this problem by buying jointly four good brood mares and raising two or three colts each winter. By keeping one extra horse and growing a few acres of wheat the four mares and one pair of geldings do all of the farm work. Conversation with the tenant in regard to these points keeps us both thinking and when you get two men thinking about the same problems and working in harmony, the business is sure to go ahead. On the other hand, many farms are too large to rent to the best advantage. The tenant who has sufficient stock, equipment and capital to handle a large farm is pretty sure to invest in a smaller farm of his own. From the mass of data available it is evident that the farm requiring one or two hired hands offers a better chance to the tenant than any other size.

Improvements.

Another important thing is to arrange the fields, fences and buildings so as to avoid lost motion and unnecessary hauling or charges for maintenance. A very important item in the location of fences is to follow the margins of soil types, so that all the field can be worked at one time. It is also important to have the fields large enough. Fences are a great item of expense. Simple and handy buildings

should be the rule on rented farms. The tenant does not want to pay anything except rent of land; he does not want to pay rent for fences or fine buildings. Good comfortable buildings in which every dollar invested adds to the efficiency of the farm as a renting, or money-making proposition, should be the rule. It is best to plan the barns and outbuildings so that they may easily be used for various purposes. The constant shifting of tenants brings up many new problems which can be more easily worked out if the buildings can be satisfactorily and cheaply converted to meet the needs of the incoming tenant.

The problem of investing in tile drains on rented farms depends in a large measure on the value of the land and the clags of tenants one has to deal with. If the land is worth \$100 per acre and the owner retains control of the farm and is careful in his choice of tenants, tile drainage should pay nearly as high returns on the rented farm as elsewhere. In many cases draining a few acres of wet land and filling in ditches will save sufficient fence material and cost of maintenance to make the investment a paying one, or at least, pay a considerable portion of the cost of the system. But if the farm is rented for cash rent and the tenant is not compelled to follow any definite system of farming, the landowner will find it difficult to realize any profit on the additional investment.

Before deciding the problem of getting a farm in condition to bring in satisfactory returns under a system of tenant farming, one should make a careful study of the farm and its adaptability to certain crops and animals, and work out a system of crop growing and stock feeding that will in a

(Continued on page 579).



Potato Club Boys, of Oceana Co., Arriving at the Potato Association Meeting at Grand Rapids. See "How I Made My Crop," by the Winner, page 579.

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DETROIT, DEC. 25, 1915

A FEW LEADING ARTICLES OF THE WEEK.

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FIGURE IT FOR YOURSELF.

A semi-monthly to be as cheap as the Michigan Farmer would have to sell for 25 cents a year; a monthly to be as cheap would have to sell for 12½c a year.

A monthly at five years for \$1 gives you 60 issues at a cost of 1⅓c each issue. A weekly at three years for \$1 gives 156 issues at a cost of ⅝c an issue.

The Michigan Farmer at three years for \$1 is less than half the price of a monthly at five years for \$1. In other words, a monthly to be as cheap as the Michigan Farmer at three years for \$1 would have to be sent 13 years for \$1. Where is the practical farmer who can do without at least a weekly farm paper and get satisfaction? He does not exist. Reason it out yourself.

CURRENT COMMENT.

This issue will reach the majority of our readers during some stage of the celebration of the Christmas holiday. The scene upon which it will break is a pleasant one to contemplate. Personal disappointments will have been forgotten in thinking of the happiness of others; personal differences will have been overlooked and peace and good-will will radiate throughout the home circle. The universal admission of the Christmas spirit to heart and home will bring a degree of good cheer to the family hearth which is not equalled at any other season.

Such a celebration of the Christmas holiday is indeed a fitting preparation

for the New Year to come, when we shall begin anew to build upon the success of the past, aided as well by the mistakes and failures which we have made, to the end that the coming year may bear fruit of the happiness which is the appropriate wish of the season.

In expressing the hope that as a weekly visitor in the home during the past year the Michigan Farmer may have added something to the cheer of the Christmas celebration upon which this issue may break, and that in the similar visits during the year to come it may add something each week to the happiness and comfort of every member of the household, we wish every member of the great Michigan Farmer family a Very Merry Christmas and a Happy and Prosperous New Year.

Of the educational influences which have made for better farming during recent years, probably none have been so potent a factor in agricultural advancement as the object lessons resulting from the application of the best practical and scientific methods by the progressive farmers of any neighborhood. In this way a practical application of science to agriculture has been brought about almost without the knowledge of those who have been influenced in that direction.

Silos are rapidly becoming standard equipment on every farm, not wholly because the value of the silo has been demonstrated by our experiment stations, but because it has been found economical in use upon the farms of the progressive farmers who first introduced the silo as a result of such demonstration, and whose practice has been emulated by their neighbors. Alfalfa is becoming a common forage crop upon the farms in many sections of the state, not as a direct result of the educational propaganda to that end, but because it is being successfully grown in hundreds of communities in the state by those who persevered in investigation and experiment until the problem of its success under local conditions had been satisfactorily solved.

The introduction of boy and girl club work in the state has brought to many rural communities a new class of object lessons in the success of the younger generation of farmers in whatever farm project may be made the feature of club work. On the first page of this issue appears a cut showing the club boys of Osceola county upon their arrival at the potato meeting at Grand Rapids. On page 579 will be found the paper which the champion potato grower of this club read at that meeting. An analysis of this boy's success is practically an analysis of the phenomenal success which has rewarded the efforts of many of these junior farmers in club projects in all parts of the country. Such an analysis will generally reveal that success to have been due largely to the persevering and thorough manner in which every operation relating to the project has been done. In every case this kind of work should be looked upon as an object lesson worthy of the attention of older farmers, rather than as a matter of education for the boys and girls alone. When so viewed this junior club work will be of the greatest benefit to every rural community in which it is being carried on.

Much is said and written these days about rural credits. Various plans have been advanced for the supplying of long-time credit to farmers through a pooling of their credit resources. The time is not far distant when legislation both state and national, will be enacted for the purpose of supplying this kind of credit on the amortization plan.

One Phase of Farm Finance. Much is said and written these days about rural credits. Various plans have been advanced for the supplying of long-time credit to farmers through a pooling of their credit resources. The time is not far distant when legislation both state and national, will be enacted for the purpose of supplying this kind of credit on the amortization plan.

A correct understanding of the needs of the farmers of the country along this line cannot well be arrived at without a study of the credit facilities now open to them. For the most part, the study of such facilities in both official and private investigations has been limited to inquiry of the banks of the country relating to their mortgage loan business with their farmer patrons. Generally the mortgage loan business done through other agencies has been grouped together under a single head. There is, however, one agency doing a large mortgage loan business to the farmers of the country, about which little is known to the average borrower, but which has been a rapidly increasing factor in this field during recent years.

At the ninth annual meeting of the Association of Life Insurance Presidents held early this month, a report was submitted showing the extent of mortgage loan business done by the life insurance companies of the country, and the approximate proportion of farm loans carried by them. This report is interesting in that it shows the assets of the life insurance companies to have nearly doubled in the past decade, while the percentage of those assets which are held in the form of real estate mortgages has increased from 26.88 per cent in 1904 to 34.58 per cent in 1914. Of the total of mortgage loans held by life insurance companies, 39.03 per cent, or \$654,650,505.72 was on United States farms.

In some sections of the country, notably the great middle west where agriculture has developed most rapidly in recent years, a very large percentage of the mortgage loans held by life insurance companies on real estate is on farm lands. In the north central states, in which group Michigan is included, the proportion is about evenly divided between farm and other real estate.

A comparison of the total value of other real property as compared with farm property in the various sections of the country shows about the same ratio as the amount of insurance loans on farm and other property. The statistics show that in Michigan there are but \$1,252,126 of such loans which bear an average interest rate of 5.41 per cent. This interest rate compares quite favorably with that charged in the states having relatively large aggregate loans of this character. A study of the increase in this line of business shows that the increase during recent years has been largest in those sections of the country where relatively high interest rates prevail, and smallest in the states where low interest rates prevail. At the same time, the large amount of loans of this character held on the farms of some of the central western states show that where the demand exists for farm loans of comparatively large average size, a considerable percentage of that demand has been satisfied from this source, and at rates of interest somewhat below the average rate prevailing in those states.

One great trouble with the farmer's money market is that it is too generally restricted to his own locality; the source of farm capital above indicated is not, however, so restricted, for which reason its importance to the farmers of the country is proportionately increased. The importance of this source of farm capital is shown by figures submitted in this report, indicating that the mortgage loans held by 148 life insurance companies on real property of all classes exceeded by about 20 per cent the total of similar loans held by something like 20,000 banks, loan and trust companies which reported mortgage loans for 1914.

The farm loans reported by the U. S. census in 1910 show a division of capital supplied to be as follows: Life insurance companies 37½ per cent;

banks 31½ per cent and private capital 31 per cent.

HAPPENINGS OF THE WEEK. Foreign.

The European War.—With winter weather prevailing throughout the northern countries of Europe and the Allied forces back in Saloniki there has been very little active operations in the different theatres of war. It is reported, however, that the Teutonic armies are accumulating large quantities of munitions along the Greek border and on the western front. It is anticipated that active campaigns will be conducted in both of these sections during the coming spring. Turkish armies are said to be preparing for a campaign on the Suez Canal and in Egypt. The Allied troops have bombarded Turkish positions along the Dardanelles but no important changes are reported. The Italians have made further advances against the Austrians and continue to occupy territory and to improve their strategic position. Artillery engagements compose the main diversion of troops along the western front. A shortage of food seems to be a menacing factor with the central powers, and Austria and Germany are having trouble over Poland and the failures in bringing the eastern and western campaigns of 1915 to successful issues.

That the forces of Gen. Villa, of Mexico, are rapidly disintegrating is shown by the fact that four of his important generals conferred at El Paso last week looking toward arrangements for joining the army of Provisional President Carranza. The whereabouts of Gen. Villa are not known. It is believed that he is preparing to leave Mexico.

The American peace pilgrims landed at Christiana, Norway, December 18. The party will proceed after holding a number of meetings at this point, to Stockholm, Sweden, thence to Copenhagen, Denmark, and from there to The Hague, Netherlands.

Better hospital conditions for the French armies have reduced the mortality among the sick and wounded from 53 per one thousand to a ratio of only 18 per thousand during the past year.

The French people have organized a comprehensive temperance society with President Poincaré as honorary president.

Great Britain fears a secret pact between the Teutonic nations and Greece, which, if true, may finally place the Allied armies at Salonki in an embarrassing situation. Every precaution is being taken by the Allied forces to keep within the terms of the agreement with the Greek government.

King Peter, of Serbia, has taken up a temporary residence in Rome and the parliament of that country is also to be transferred to the Italian capital.

Sweden has decided to make an energetic protest to Great Britain against stoppage by British authorities in Kirkwall, Scotland, of parcel post service between Sweden and the United States. The Swedish government has now ordered all parcel post from England in transit across Sweden to be held up indefinitely.

National.

On December 18 occurred the marriage of President Wilson to Mrs. Norman Galt at Washington, D. C.

The United States government has forwarded a second note to Austria regarding the sinking of the Italian steamer Ancona. The State Department refuses Austria's request for a bill of particulars upon which the original American demands were made. The continuation of diplomatic relations will largely depend upon Austria's reply.

A reply to charges that British merchants were profiting by the European war at the expense of American trade has been made through the embassy at Washington. In their argument the British conclude by stating it to be a significant fact that our exports to the Scandinavian countries have been increased since the war began to a total equal to American shipments to these ports and to Germany previous to the war. The conclusion is that American goods have been reaching Germany through the Scandinavian countries.

The Republican National Committee has selected Chicago as the city for holding the 1916 republican national convention on June 7. In selecting this date the party has broken the custom of holding a convention previous to that of the party in power, whose delegates will convene at St. Louis, June 14.

A state-wide survey and campaign against tuberculosis in Michigan is to be extended to all the county jails of the state according to an announcement by the state board of health.

Keeping the Hired Man

THE constant discussion of the farm labor problem is interesting, but as a usual thing writers consider it entirely from the standpoint of wages and forget another factor that should be emphasized. If Bill can earn \$25 per month with his board, room and washing, on the farm, and \$50 per month, with his expenses very high, in the city, it does not follow that these figures are a strong argument for either farm or city work. However, if Bill's city wages mean a small rented home in the city, which his wife can make into a real home, then Bill will doubtless prefer the city to the farm. Bill could not have worked on many farms as a married man, as his home would have been one room upstairs, and his evenings would have been lonesome.

It is not every farmer that can afford a tenant house this year, and probably it is not every farm that needs one, but where the acreage is large enough and the live stock carried requires the services of a year man, a tenant house is almost necessary and will prove a good investment. On three farms that I have visited, they have solved their labor problem in as satisfactory manner as it probably ever will be solved. Tenant houses are provided for the year men and they live on the farm in their own home. Expenses are not as high as in the city and these men are contented and efficient workers and the management is not worried about the farm labor problem.

Two of these farms were in Saginaw county, and the first was a large farm comprising several thousand acres and the workers were given every opportunity to feel at home through the plan of furnishing married men with small tenant houses. The second farm comprised only a few hundred acres, but the large amount of live stock on the place required the services of eight or ten year men. They were all furnished with a small tenant house and a garden spot and the farm manager found no trouble in keeping the houses filled with reliable men. One example was of special interest. A city blacksmith failed up in his work because of his too frequent indulgence in liquor. The man's wife obtained a position for him on the farm and away from his usual temptations, with a good wife to manage him, this man has been doing all of the blacksmithing on the farm as well as other general work, and he has been of great assistance to the farm manager. Without the small tenant house such a laborer could never have been induced to live on any farm, but by giving the man the independence of living in his own home both the farm and the man were benefited.

The third of the farms is in Van Buren county. It is devoted to fruit growing and live stock and there are three tenant houses on the place. The manager of this farm seems to find no trouble in hiring reliable men and the men are giving excellent service and showing interest in their work. One of these men owns a small motor car and undoubtedly is financially able to start out for himself in the farming business, but due to the fact that he has all the comforts of his own home he is remaining and showing the greatest interest in his work. He is a fine hand at managing live stock, and knows the fruit business thoroughly. He could not be replaced by the transient labor on which farmers depend and he would not work on a farm that could not furnish him a home.

Business vs. Sentiment.

It is the custom of the employes of many farms to find fault with the management, and the management frequently forgets that the employes are spending the best years of their lives in building up a farming business in

which they can have no financial interest. The same thing is true of the city factory. Men can hardly be expected to fall in love with the boss, and the boss knows that the men are working for their wages, and that many of them will "soldier" on him if they have the opportunity. Of course, men are not all alike, many of them work for love of the job, but the point I am striving to arrive at is the fact that there is absolutely no sentiment in the average employe, whether he is toiling on the farm or in the factory. The man is working for the money he must have to enjoy the comforts of the home life, for which every normal man is seeking. It is possible to write most beautiful descriptions of the beauty of farm life when you sit on the veranda and watch the sun sinking in a haze of glory at the end of the farm lane. At least you might do it if you owned the farm, but what about the hired man on the farm? Winter is coming, Bill has just finished bedding down the horses, he will soon finish supper, and while you read by the fire, surrounded by the wife and children, Bill will go upstairs and sit around all alone. Finally you go up to Bill's door and say, "Well, I guess I can look after the stock now, as the fall crops are all in. I guess I won't need you after the first of the month." Bill has saved possibly as much as \$100 during the summer. Maybe he will land a job in the factory this winter. Maybe he will not come back to the farm next spring, and he knows a lot about the farming business, too. If Bill had lived in a tenant house with a good garden to produce at least part of his winter's food, he could have afforded to spend the winter on the farm, even though work was rather slack, and bucking wood was his principal diversion. Next spring Bill would have been ready for business and he would have liked the farm.

The Human Side.

It seems to me, after working with farm laborers, factory workers, office men, etc., that they are all pretty human sort of fellows, with such a mighty little real difference in their make-up that you can't find it. Every one of them are working because they love and respect their home and family, and if they have neither, they are working with that end in view. Place your farm manager or hired man, tenant or whatever you may call him, in a good home, such as every good man

deserves, and you will go a long distance in the solution of the farm labor problem. It costs money to do it, but I would like to hear of any successes in managing farm workers on the old plan of eight months work per year, with the old storeroom rigged up into a "happy home" for the said employe. A lot of farmers cannot afford to build a tenant house and they do not need one. Possibly they can get along with the occasional trading of labor with their neighbors, and the hiring of neighbors' boys who still live at home. In that case a year man is not a necessity. However, on many live stock farms there is plenty of work all the year around, and many prosperous stock raisers are constantly worrying about the shortage of labor, and their wives are overworking in feeding and caring for the hired men. There is one remedy for that situation. Build a tenant house, buy a "knock-down dwelling," try and gather together a few hundred dollars for that purpose. It will mean a sacrifice in many cases but it will pay. If you do not need a regular hired man this will be of no interest, if you do need one, remember that Bill does not go to the city for wages alone. He has no sentimental love for your farm, but he does want a home. He will try to get that home either in the country or in the city, and if he is any good he will get it.

Ingham Co.

R. G. KIRBY.

BUILDING UP THE RENTED FARM.

(Continued from first page).

measure conserve its fertility. By making a careful study of the soil, one is better prepared to make an intelligent estimate of the cost of building fences and drainage necessary to properly conduct the constructive system of farming he has in mind.

Meadow and Pasture Lands.

One of the most difficult problems confronting land-owners is that of maintaining meadow and pasture lands. The growing of clover and grasses carries with it the idea of intensive farming, the feeding of stock, better crop rotations, better cultivation and the return of farm manures and soil residue to the land. If the farm manures are applied to the meadow lands it insures a big crop of hay which, if fed to stock, adds greatly to the supply of farm manure. The larger crops of clover and grasses that are harvested, the more humus and nitrogen go back to the soil in the roots and stubble of the crops.

If certain fields are rough and roll-

ing, it is better than they should be seeded with grass and utilized for grazing purposes. The land-owner who desires to maintain his meadows and pastures in good condition will find it necessary to make provision in his leases that certain fields must be seeded and kept seeded with grass. Much land that cannot be safely cultivated can be made into excellent pasture. Any sod-forming grass will help to prevent soil-washing. Often it may be found practical to grow a cultivated crop at intervals of five or six years and keep the land in meadow or pasture between times. Fields may easily be ruined if the tenant is always allowed to cultivate them as he sees fit. As land-owners come to value their land more highly and take better care of it, underground drainage will be more largely resorted to to prevent soil erosion. There can be no question that in many cases tile drainage is the most effective preventive, and in the long run the cheapest. The problem of fixing the proportion of pasture and meadow land to that devoted to grain and cash crops is one that requires careful study and attention. This not only makes it possible for the tenant to practice a profitable rotation of crops from year to year, but it encourages the raising and feeding of stock and the feeding of considerable grain on the premises. What is imperatively needed on the rented farm is a system of stock breeding and feeding that will make use of the rough products of the farm and convert them into dollars and fertility.

The improvement of pastures by re-seeding, by mowing the weeds during the summer, by disking and the application of lime and phosphorous has proved profitable on many farms. By planning the work so that from five to ten acres may be disked, limed and reseeded each year, the land-owner furnishing the seed and the fertilizer and the tenant doing the work, the pastures will be kept in good condition. As a rule the expenditure of forty or fifty dollars, and two or three days' team work disking and mowing will help out wonderfully in improving pastures. And if only a few acres are limed, fertilized and reseeded each year, the expenditures will be moderate, and the tenant's labor will be more than paid for in the benefits he derives.

Dividing the Profits.

On many farms where the owner takes an active interest in the management or helps finance the stock breeding and feeding end of the business, the divide the dollar, or partnership form of lease will be more satisfactory than cash rent. A fair division of the profits from stock breeding and feeding is rather of a difficult problem to work out on a rented farm. In the leading agricultural regions an equal division of the profits is the most satisfactory solution of the problem, the land-owner to furnish the farm, the tenant the horses, unless brood mares are owned jointly and colts raised, and farm implements, and perform the labor. All of the operating and incidental expenses to be determined by agreement. At the start it is often necessary for the land-owner to buy most of the stock, but if the tenant can be encouraged to gradually work into stock until he owns one-half of the cattle, sheep and swine, it is easy to get the affairs on a sound working basis. No man can lay down rules which will apply with equal force to all cases and to all men, but in my own practice I find it best to furnish the tenant with capital to purchase one-half of the breeding stock, even though it is necessary to take security on the stock. In this way he feels that he has an interest in the animals and gives them better care than would be the case if he had no real interest in them.

Many tenants prefer to pay cash rent than enter into a partnership

How I Made My Crop

The object of growing these potatoes is to improve ourselves, our farms and our community. So far we have succeeded fairly well.

First I put on ten loads of barnyard manure, then I plowed my ground early so as to get ahead of the weeds, since half of the job is to eradicate them. About a week later I dragged the plot and continued it until potato planting time, which gave me a clean seed bed, also conserved more of the moisture which the potato plant would need later. Then a few days before planting I broadcasted and harrowed in 250 pounds of backbone 2:8:10 fertilizer.

I planted eight bushels of Pural New Yorkers, being careful to select those free from disease and true to type. June 1 I planted my potatoes and directly after planting I harrowed the ground, repeating the operation every five days so as to make a dust mulch.

My potatoes were up in three weeks after which I took a hand potato planter and planted a handful of fertilizer along side of each hill, which seemed to make them thrive better. I then gave them four deep cultivations and three shallow ones. The reason for the shallow ones was to save the

fine roots just starting beneath the surface.

On August 24 a hard frost occurred, killing almost all of the crops in this vicinity, but I saved mine by building fires around my potato plot, thus driving away the frost.

My half-acre yielded 210 bushels and 22 pounds, of which I saved 30 bushels of seed which I value at \$1.25 a bushel. I also have 170 bushels of salable potatoes worth 60 cents a bushel, and ten bushels of culls worth 25 cents a bushel. The cost of producing my half-acre was \$34.15, or 16 cents a bushel, which gives me a net profit of \$110.55.

In summing up what I have gained from growing potatoes, I will name the following points:

First, I have \$110.55 in clear money.

Second, I have learned the fundamental principles of raising the potato plant, which will help me to raise more potatoes per acre as a farmer.

Third, the value of making a close study of any business proposition.

Fourth, I am not satisfied with my results this year, and know I can do better.

Osceola Co.

H. LaFRANCE.

agreement to feed the crops to stock on the farm and divide the profits. As a result many land-owners are making provisions that so many acres shall be kept in pasture and meadow and that no roughage shall be sold from the farm. Such a lease fits many farms better than the divide the dollar plan of stock breeding and feeding and the tenant is free to conduct his business as he sees fit so long as he lives up to the lease. By assuming greater risks and furnishing his own stock, tools and equipment he usually pays lower rent than he would under the divide the dollar plan, but the divide the dollar plan helps many young men to get started in farming and is, in the writer's judgment, the form of lease best suited to present conditions in the leading agricultural regions. The owner of the land is entitled to a fair rate of interest on his investment, and the tenant should have decent pay for his labor and a fair rate of interest on his investment in stock and equipment. Under either plan of leasing both parties have certain rights which cannot justly be ignored.

Essential Provisions of Lease.

The tenant should guarantee access to the land-owner at all times for inspection or other purposes. The land-owner should furnish materials for fences and buildings and necessary repairs each year. The tenant should keep the fences and buildings in repair except for ordinary wear. With each lease should be a map of the farm so that there can be no misunderstanding as to the crop growing system to be practiced. Such a map with notes explaining the crops to be grown on the different fields will save any trouble and prove a safeguard in case a tenant attempts to break up pastures and meadows or abandon the crop rotation provided for in the lease.

The land-owner who is interested in maintaining the fertility of his farm should be willing to furnish a manure spreader if the tenant will keep the manure cleaned up about the premises, a few tons of phosphoric rock and an occasional car of lime should also be used to encourage the growth of clovers and other farm crops. It is always a good investment to add fertility to the farm. It means a higher cash rent, or larger profits under the divide the dollar plan. The silo is an investment that adds to the attractiveness of any farm as a renting proposition.

The problem of providing an abundant supply of pure water is one that should have the attention of every land-owner. It not only increases the efficiency of the farm as a renting proposition but it adds to its permanent value. Outside of the monetary value of pure water, there is a humanitarian side of the question that should prompt every land-owner to provide a clean and healthful supply of water for the tenant's family and stock.

As land values increase, and land-owners are finding it impossible to conduct their farms at a profit under the old system of farm leasing, many farms are being offered for sale. In many parts of the country these farms are being bought by bankers and business men who aim to develop a profitable system of farm tenantry. By operating several farms on a partnership, or co-operative basis, with a trained agricultural expert in charge of the whole, these farms are in many instances beginning to pay decent profits. Such a system of farm tenantry means the improvement of our agriculture because the good farmers are retained and the others eliminated. It eliminates the floater who stays only one year on a farm and moves on to another. Such a pennant system of farm tenantry, or co-operative farming, instead of being a menace to the farming industry will raise the business to a higher plane of efficiency.

New York. W. MILTON KELLY.

State Horticulturists' Annual Meet

(Continued from last week.)

GOING after the consumer's dollar," was the subject discussed by Mr. Don Francisco, assistant advertising manager of the California Fruit Growers' Exchange. He gave the results of the investigations carried on by this organization which showed how the consumer's dollar was divided. As Mr. Francisco, who frequently writes articles on marketing for the Michigan Farmer, gave in detail the results of this investigation in our issue of September 11, and as his article on "Producers Educate the Nation," which gives what he said with reference to the jobber, appears in the present issue, no report of his talk will be given. The talk proved very popular because he took up the marketing question from a standpoint which was new to most of those present.

The evening session was very enjoyable, the chief subject of interest being a talk by Senator H. M. Dunlap, the well-known orchardist of Savoy, Illinois. This talk was illustrated by moving pictures taken on Mr. Dunlap's farm by the Department of Horticulture of the University of Illinois. They showed well the operations of spraying, cultivation with tractor, picking and packing, and the hauling of the fruit to the cars by a large truck and trailer. Mr. Dunlap's remarks were very practical and the comments he made with reference to the pictures gave the growers a good insight into extensive and systematic orchard operation.

Birds the Fruit Growers' Friends.

Mr. Sargent, of the Grand Rapids Public Museum, gave a most interesting talk on "Birds and their Relation to Horticulture." He said that we have destroyed the homes of the birds and made conditions favorable for the development of insects. Under natural conditions the birds kept the insects under control, but now as the birds are growing scarce, other means of control are necessary. He urged that we encourage the birds by providing resting places and winter feeding places for them. Practically all of the birds common to this part of the country do more good than injury, their chief diet being insects and weed seeds. He said that the cat was the birds' greatest enemy and that all useless cats should be killed, for a single cat will kill on the average of fifty birds a year. This talk was made doubly interesting by being illustrated by a large number of lantern slides. The evening's entertainment was concluded by motion pictures showing strawberry growing in Kentucky and the methods used in bridge grafting, the films being furnished by the U. S. Department of Agriculture.

Wednesday morning's session was devoted to the student's contest and business meeting. The former event, in which the senior horticultural students at M. A. C. are contestants, has become one of the annual features of the state society meeting. Many deem that the information given in the speaking contests to be as valuable as any received at the entire meeting.

Loren Williams, who spoke on "Fruit Laws of Michigan," won first prize in the speaking contest. R. W. Peterson, discussing the question, "Should the Horticulturist Keep Bees?" got the second premium, and L. R. Stanley took third with a talk on "Apple Scab." The judging of premiums were awarded as follows: L. R. Stanley, first; R. W. Peterson, second; P. J. Rood, third.

A Membership Campaign.

In the business meeting the matter of the society's finances was taken up. A plan presented by the executive committee was accepted. This plan was that a systematic campaign be started in each county for life members at the present rate of \$5.00 each,

three men being appointed in each county to take care of this campaign. This will be supplemented by letters sent out from the secretary's office. The membership fees so received will be placed in the Lyon memorial fund, and it is hoped that within the next two years, the fund will have become large enough so that the income from it will go a long ways toward paying the annual expense of the society. Two years from the present annual meeting the life membership fee is to be increased to \$10 and the annual dues to \$2.00.

At the annual election all of the officers whose terms expired were re-elected, as all were eligible for another term. These officers included President C. A. Pratt, Secretary R. A. Smythe, and Treasurer Henry Smith. Members of the executive board who were re-elected were C. A. Bingham, of Birmingham, and E. O. Ladd, of Old Mission.

The Wednesday afternoon session was opened by Mr. Seth T. Bush, of New York, who discussed "Peach Problems." The problems of the peach grower, both from the marketing and growing standpoint, are many, and the suggestions Mr. Bush made proved of great value because of his vast experience in this work. Mr. Bush is one of the largest and most progressive fruit growers in New York. Mr. Dunlap gave an unusually interesting talk on "Packing and Marketing Apples." In his operations he uses the grader and thinks it of great value in the sizing of the fruit. He does not think it is wise for the eastern growers to imitate those of the west by using the box as a fruit package. He said that we should gain our reputation as fruit growers through the use of barrels and bushel baskets, the destructive eastern packages. Mr. C. F. Schneider of the Michigan Weather Bureau, gave an able discussion of "The Use of Water as Protection Against Frost." He spoke of the value of Lake Michigan to the western part of the state and the influence a body of water has on the temperature.

The Women's Session.

Great interest was shown in the women's session which was held in the parlors of the Association of Commerce Wednesday afternoon. Mrs. H. M. Dunlap, one of the best known institute speakers on household subjects, gave a talk on "Home Making," and Mrs. Nellie H. Smythe, who is president of the Federation of Women's Clubs, spoke on "Interests Outside of the Home for Women of the Farm." These women's sessions are growing in popularity, and will undoubtedly be annual features of the State Horticultural meetings.

The annual banquet was largely attended. It was held in the banquet hall of the Hotel Pantlind, and was as usual the social event of the horticultural meeting. Hon. Chas. W. Garfield, the Horticulturists' favorite toastmaster, presided. He called upon the leading lights of Michigan horticulture, who gave reminiscences and prophecies for the future of fruit growing in this state.

Thursday was devoted mainly to methods of fruit production. Mr. T. A. Farrand, well known throughout the state as a practical advisor on horticultural matters, handled the subject of spraying. Prof. R. H. Pettit, "the bug man," of M. A. C., talked on "Pests," giving special attention to the control of the aphid, which was so serious last year. Mr. Seth Bush gave many practical hints regarding the storage of fruit in the discussion, "Success and Failure in Cold Storage." Mr. O. W. Braman, of Grand Rapids, told of his experience with sweet clover as a soil rejuvenator. Mr. Braman has had considerable experience with sweet clover, having grown

it for several years and having carried on some fertilizer experiments on it. His conclusions are that sweet clover does not do well on soil that has been depleted by constant cultivation, but that it does well on soil that has just been broken up, even though the soil is poor.

The most successful meeting the state society has had for many years was closed by a talk on "Soils Suitable for Fruits," by Prof. M. M. McCool, of M. A. C. He brought out the adaptability of the various soils to the various kinds of fruits and the necessity of giving these soils proper care.

CHERRY GRADES.

We are informed by the economists that farm products should be standardized, that the different products should be grade just as sugars are graded. The theory of standardization is easy. It is the practice that gets us into difficulties. An effort was made last summer to grade the cherries marketed from the Grand Traverse region. One of the requirements of the rules adopted was that the cases should be full. That brought up the question as to what was a full case. There were almost as many opinions as there were growers. So some experimenting was done with a set of scales on the loading platform. One hundred cases of Montmorency cherries were weighed. These were taken in lots of five, five cases from each grower, and the average found for each lot, and then the average weight for the entire 100 cases. Pains were taken to weigh the cases from growers who had extreme ideas regarding the quantity of fruit that should go in a case. The average weight for the grower who was the most economical was 29.7 pounds, and the average weight for the grower who was the most generous was 34.4, a difference between the two of 4.4 pounds. As the cases would weigh the same in both cases the difference was in the amount of fruit. The average weight for the 100 cases was 31.8 pounds. Fifty-five of the cases weighed 32 pounds or better and 45 cases weighed under 32 pounds. From these figures it might be reasonable to rule that a standard case of Grand Traverse Montmorency cherries should weigh 32 pounds or more.

The Early Richmond cherries did not prove to be quite so heavy as the Montmorencies. Twenty-five cases were weighed and the average was found to be 31.12 pounds. The best showing was only 31.4. It is probable that this average would have been raised materially if cherries of this variety had been received from the same growers who filled their Montmorency cases clear to the top.

The average for the Windsor cherries was a little better than for the Richmonds, although not as good as for the Montmorencies. The exact figures were 31.8 pounds. Among the growers having Windsor cases on the scales were two of the very best in the region, so that it is not likely that this average can be raised more than enough to get it to 32 pounds.

It is quite likely that there would be a slight variation in the weight of cherries with different weather conditions, and perhaps the average would vary a little from season to season. The amount of these variations will be determined in time as it is proposed to conduct weighings each season until figures are available for all the different conditions likely to be met with.

Gd. Traverse Co. R. H. ELSWORTH.

THIS WEEK many of our readers will decide if they will continue the Michigan Farmer another year, three or five, at less than one cent a week. Can you afford to let it stop? Your date tab will tell you if your time is up.

Rations for Winter Dairying

THE winter dairy herd must have plenty of well-balanced feed, and comfortable surroundings. The dairy farmer must base his ration upon the feed existing during June, for the term "June pasture" expresses the ideal condition for producing milk and butter-fat of the highest quality, and in greater abundance.

The natural pasture grasses are not only succulent, but they serve in keeping the digestive system of the animal in a laxative condition, which is most favorable for the best action of the organs of digestion. Too many cows suffer from constipation during the winter season, which greatly impairs their value as milk producers.

The farmer must supply nutrients, both in bulk and succulence. Clover, alfalfa, or clover and alfalfa hay are best, but of course, mixed hay and ensilage may be fed if these are not available. Alfalfa hay, being richer in protein, is perhaps most desirable as a portion of the roughage and permits a saving in high-priced grains. The grain portion should be made up of meals, chops and by-products selected according to the needs of the cows and market conditions.

Judgment Necessary in Feeding.

Judgment is required in feeding the dairy cows, as with other stock. The feeder must know his cows and something of the effects of the feeds fed. Corn meal is a good feed but no good dairyman will feed it alone. The same is true to an even greater extent with oil meal, cottonseed meal or other high-protein feeds, but when one of these is mixed with the heat-producing corn meal and other grains to make a mixture having about the same bulk as well-ground corn and oats equal parts, the ration is improved in balance, and in suitable form.

Without clover or alfalfa in the roughage, it is difficult to make a satisfactory and economical ration entirely from home-grown material and very often the farmer is able to exchange some of his home-grown products for a by-product that will replace a portion of it in the ration at less cost and with actual improvement.

The farm silo solves the problem of winter feeding best from all points of view, because silage is preferred as a cheap source of succulency. The second choice would be roots. These are quite satisfactory alone or as supplementary to silage, and by all means should be more generally used than at present. Oil meal is of greatest value because of its well-known laxative qualities, coupled with its high protein content.

If silage or roots are not available a grain ration like the following would be proper: Bran 40 parts; ground oats or barley 20 parts; ground meal 20 parts; oil meal 20 parts.

Weigh the Feed and the Milk.

All feed should be weighed out for the cow, as should the milk produced be weighed. It will be taken for granted that no hard and fast rules can be laid down as law in mixing feed or as to quantities to be fed. The judgment of the farmer must decide this, for much will depend upon the individuality of the animal, stage of lactation, etc. It is safe to feed 10 to 15 pounds of hay, 25 to 45 pounds of silage, or 30 to 50 pounds of roots, varying the quantities according to the size and capacity of the cow. In addition one pound of grain mixture should be fed for every three or four pounds of milk produced. If a cow tends to fall off in her production without showing any gain in her body weight it would seem that she is not eating enough, while if she gains in weight at the expense of production it is quite certain that she needs more protein added to her ration. If this rule fails all around, then she is the wrong kind of a cow to make money with. A good dairyman will not allow

a cow to "run down" and become too thin. If the cow "gives too much milk," she will stand a wider ration, that is, more fattening feeds in proportion to those richer in protein.

I know a farmer who has built modern buildings, paid for a large productive farm, and is banking money each month, just by judicious management of his dairy herd during the winter. That there is more profit in winter dairying no practical farmer can doubt. The very fact that the farmers who are most prosperous, most independent, and leaders of their communities, farm this way, should be "writing on the wall" for others, who should follow suit at once.

New York.

EARL W. GAGE.

WHEN TO PLANT SOY BEANS FOR SILAGE.

In a recent issue of the Michigan Farmer you told of planting soy beans with corn for silage. Will you please say at what time you plant the soy beans, and how thick to plant? As I have never had any experience with them, and being a new beginner, any advice will be greatly appreciated. I built a silo this year and am quite anxious to increase my corn crop. Have you any good seed corn for sale? Ogemaw Co. H. J. H.

The soy beans should be planted at the same time you plant the ensilage corn. Some corn planters have attachments so you can plant the beans right in the hill with the corn, or if you plant the corn in drills then the beans are also planted in drills.

Last season I had a planter follow the corn planter, taking pains to drive so the shoe followed exactly the shoe of the leading planter. This worked well. One year I tried mixing the soy bean seed and the seed corn together and planting at the same time, but it did not work because I could not get a uniform distribution of either corn or bean seed.

If you plant corn by hand, you can go over the field and plant the beans just beside the hill of corn. It should be done at once so the corn will not get too much start of the beans.

BUCKWHEAT BRAN VS. WHEAT BRAN.

Is buckwheat bran as good for milch cows as wheat bran? What is the food content compared with bran? Is it a good feed to go with corn silage?

Gd. Traverse Co.

F. V. W.

If we study the chemical analysis of buckwheat bran and wheat bran, we will find there is a very considerable difference in their value for feeding purposes.

Buckwheat bran contains 7.4 per cent of crude protein; 30.4 per cent of carbohydrates; 1.9 per cent of ether extract. Wheat bran contains 12.6 per cent of crude protein; 44.1 per cent of carbohydrates; 2.9 per cent of ether extract.

Wheat bran has considerably more of the food nutrients than buckwheat bran. Besides, buckwheat bran is a easier as scours, and other digestive very uncertain quantity; sometimes it is composed of only the hulls, and then it is almost worthless, for it is not digestible. Where a considerable amount of buckwheat middlings go in with the hulls, then the bran is of much more value. One must know how the bran is prepared to get an idea of its value. But it is safe to say that buckwheat bran is nowhere near as valuable as wheat bran to feed to milch cows.

Buckwheat middlings must not be confused with the bran. The middlings are a splendid food, but they should contain none of the hulls. The pure hulls are practically indigestible. Buckwheat middlings being richer in protein than wheat bran would be a splendid food to feed with corn silage. The bran would not.



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Developing the Gilts

MOST of those among us who are interested in pigs have noticed the fact that some breeders of pigs regard it as a part of their system of management to take the first litter from the gilts which they save for breeding stock at the end of a year from their birth. I remember how much I was struck with the diminutive size of a Jersey heifer, the first I bred, if I am not mistaken, which came in to season and was served at the end of about sixteen months. She never seemed to grow but matured early and remained an abnormally small cow. Growth is not always impeded to this extent by service at an early age, but the lesson had its influence.

All experienced breeders of pigs are aware that a gilt will continue to grow, as a rule, and develop after she farrows for the first time, and that at the age of eight months when service is necessary if it is intended that she should breed at the end of her first year she is still growing. To check her growth at this time is to spoil her for good. Take a gilt of a large breed, the pick of a litter of the highest type and assume that she is intended for exhibition. Her chance of success depends practically upon her size, other points being equal, but if she is bred at the age of eight months the size which she might be expected to attain in due course will never be reached, owing to the demand made upon her by the pigs which she carries and ultimately produces. A large sow produces large pigs and the most careful observations have shown that both the size and the weight of a litter are in proportion to that size tempered with age, for a mature sow produces more and larger pigs than a gilt. A gilt invariably produces a smaller litter of smaller pigs than when she is older. Thus if age and size both influence results we cannot doubt what is the best course to pursue. Common sense alone once the question is thought out will indicate the desirability of deferring the period of service and in consequence the date of the first litter so that more time may be devoted to untrammelled growth.

It is probable that there are some who believe that to defer the first litter means a direct pecuniary loss. After feeding a gilt for a year they regard it as the proper course to obtain a speedy return. It is obvious, however, that if the value of a gilt which may be kept for years for breeding purposes is permanently reduced for this purpose the loss of profit will be largely increased. A gilt allowed to grow to full size will make a better and more certain return than would be possible under other conditions. Moreover, she will make that profit twice a year while her value will be distinctly increased. However well a gilt may be bred she is immature and imperfectly grown when she produces her first litter at the age of twelve months. By no means will I breed a gilt until she is fully a year old.

If we wait until the March-farrowed gilt is at least a year old before breeding her we have given her time for growing and developing and then she would farrow early in August, which is a good time for pigs to arrive as there is nothing to hinder both sow and pigs from doing well if provided with good shade and water. It cannot be doubted that under such conditions a young sow will be much superior to what she would have been had she farrowed four or five months earlier and that her pigs will be finer specimens and realize more money. In the ordinary course of pig management a sow farrowing early in March should farrow at a similar date in September, two litters each year. In the case of the gilt which has produc-

ed her first little family in August, extra time is advantageously allowed, she may retain her pigs a little longer and with her liberty rest as long as it is safe to allow her before she is again bred to come in with her second litter in March.

Illinois.

W. M. HARDY.

THE STRAW STACK.

This has been a season of unusual grain growths in the central and eastern states where, with a few local exceptions, wheat, oats and barley were rank, owing to the heavy rainfall. Consequently the straw stack assumed big proportions on the average farm.

It should be a rule from which there is no deviation to work into manure every bit of straw grown on the place by the time another threshing time rolls around. In our own practice we have frequently carried this to such a point that it became necessary to purchase of our neighbors sufficient of the article for bedding the horse stalls in late summer when the other stock was out in pasture and did not require any.

Granted that there are farms where the amount of stock kept is proportionately smaller than the grain acreage and not all of it can be utilized in stalls and stables as an absorbent, there still remains no excuse for selling it off the farm, nor for setting fire to it. Spread on the land and turned under with the plow it returns to the soil a portion of what was removed from it, even though not equal to stable manure in nutrient value.

But the legitimate use for straw is as an absorbent in stalls and stables. Farmers who pride themselves upon conservation of soil, religiously applying the solids to the land, are still many of them careless when it comes to the liquids, which are even richer in fertility. The days of boring auger holes in stable floors to get rid of these, are, let us hope, past and gone. But sufficient absorbents to trap them and avoid waste is yet lacking in many instances. Here, as has been stated, is the legitimate place for straw. Some complaint has been heard occasionally when this was urged that it means a whole lot of work to lug in straw and lug it out again, saturated with manure. True, it means work, but so does anything in this life that is worth while, and few men who make their living from the soil would be willing to make such an admission today. We have passed the day of so-called wood-chuck farming when the farmer was content to lay around the house all winter and do nothing but a few chores. We are learning that live stock is the bank upon which to depend for the future welfare of our soils. We must conserve every bit of fertility to keep the land from going back. How better can this be done than through our flocks and herds fed generously upon the products of the farm which are in that way returned to the soil, thereby retaining the natural elements of fertility and causing it to improve instead of deteriorate.

There is some nutritive value in straw as a stock feed. Straw, particularly oat straw, is relished by live stock to a considerable extent. The head ends and chaff afford quite a bit of picking. Even milch cows, accustomed to a selected diet, relish an occasional opportunity of nosing over a feed of bright oat straw. But it has its limitations and in these days of ensilage and alfalfa is not to be considered as the least bit of a rival of those two popular rations. So that the best use for the straw stack is to put it generously into the stables as bedding. Nothing in the way of animal comfort on a cold winter night

can surpass the big, warm bed of clean straw. And for a perfect picture of appreciative content I recommend a look at a bunch of pigs of any age up to the eyes in straw snuggled down for sleep. It sends a man from his day's work among his animals to his own warm bed and comfortable fire with a clearer conscience because of it.

So for two good reasons every bit of that big straw stack should be converted into manure before spring. First, leaving the humane side out of the question, if one so desires, for the land's sake use the straw liberally for bedding. Every stalk soaks up the liquids of the excrement, thus preserving it from loss. Second, for the comfort of the domestic animals provide every stall and pen with a liberal coating of straw and see that it is renewed daily. Especially is this necessary for health as well as for comfort in the case of dairy cows or other stock kept on cement floors. Remember the old saying, "as cold as a stone" is as true when compared to cement. If you don't believe it place the bare hand on a cement floor some cold winter day and find out from experience. Warming up a cement floor with corn and oats is rather expensive. Straw is better and cheaper.

Genesee Co.

E. E. R.

HOW TO BUTCHER A SHEEP.

I think W. M. Hardy (see Michigan Farmer of December 4), makes unnecessary trouble for both himself and the sheep when he butchers. His method may do for a strong man, but breaking the neck of a big fat sheep would be difficult for me and tedious for the sheep.

I tie the sheep to a post by a rope around its neck and stun it, either by shooting or by a blow from the axe. Unless you are a sure shot (which I am not) the axe is better, only don't strike between the eyes. That part of a sheep's head is made to butt with and I have seen an ordinary ewe stand up under two strong blows from a heavy axe, on this part of the head. But a downward blow on top of the head, almost between the ears, will do the business quickly.

I generally repeat the blow after the sheep is down to be sure unconsciousness is complete, then slip a slab under the head and chop it off as you would a chicken's, striking as close to the head as possible. Then, when it stops kicking, hang it up, skin and dress as Mr. Hardy says. The head being off there is no danger of tainting anything, even if some stuff does come out of the gullet, but it seldom does. Keep plenty of clean warm water at hand and if knife or hand touches the wool rinse thoroughly before letting it touch the flesh again.

I have dressed ewes of all ages and conditions, some newly shorn, some in full fleece, and only once was there any rank flavor and that only in one small portion, due to carelessness. A yearling ram also made first-class meat. Have always taken them fresh from pasture or feed rack, without starving process to empty stomach and bowels.

Eaton Co.

STACY BROWN.

LIVE STOCK NEWS.

Throughout the corn belt states there is a fast growing disposition among farmer-stockmen to retain their good breeding heifers and cows, with the view of restoring the cattle breeding industry, and this accounts for the real scarcity of choice little yearling heifers on the Chicago market week after week. It is certainly time that beef cattle breeding was restored to its normal proportions, and while it is encouraging to learn that the work has started it is going to take a long time to bring it about. Grade cows are now selling in stock raising districts for \$80 per head, and late sales have taken place of Shorthorn, Hereford and Angus calves at weaning time from \$30 \$40 each.

Economy of Liberal Feeding

LADY remarked the other day that since she had fed her hens enough so they had all they would eat at night, and would not act as though they were hungry, they were not eating much more than they had been before and they were laying many more eggs. I was not surprised for this is what I have been arguing for several years. Hens that have been kept on just a little short rations will have a growing hunger that will make them almost ravenous after awhile and they will not lay anywhere up to their capacity, but after they have been fed heavily for a few days until their hunger has been appeased somewhat they will drop back to their normal ration, which is very often just a little above what they were getting when their hunger was never satisfied.

Insufficient Feeding Cause of Poor Results.

I have investigated in several cases where farm hens were not laying as the owners were expecting them to, and in every one of them I found the hens were not getting enough feed at all. One farmer said his hens would eat a bushel of corn right down if he would give it to them. I asked him how many he had, and he thought there were about fifty or sixty. Now he did not feed them more than a gallon of feed a day and complained all the time because they were determined to eat with his pigs. His hens were so hungry they would follow him around when they saw him with a feed vessel in his hand, and plead with him for something to eat, but he thought they should hunt most of their living. He remarked that his hens were not paying their way at all, for he got but few eggs and only when the price was down. I asked him if he would try to fatten his hogs or beef cattle on half rations and he assured me he would not expect them to do anything if he did. He said the most profit in cattle or hog fattening was made where they were fed all they would eat all the time. Even his milk cows he would not think of stinting on feed, for he said they would drop down on their flow of milk if he did. He was emphatic in his opinion that cows would pay well for every particle of bran and chop he could get them to eat. I tried to show him that his hens would do the same if he would give them a trial, and he decided to try it, but after several months I visited the farm again and he was still feeding his hens less than enough to satisfy them, though he was feeding much better than he had been doing. He was getting better results, but I tried to convince him he would get yet better results if he would feed the hens all they would eat all the time, and balance the ration by the use of meat meal in the winter time. As he did not have a very large flock and plenty of range the meat meal was not necessary in the summer.

Protein Feed Necessary.

On another farm there was a flock of between two and three hundred. The farmer's wife here tended to the flock and she tried to feed them plenty, but she did not feed any meat meal in the summer. Her chicks did not mature rapidly and often it took four months to bring them to two or two and a half pounds in weight. Her hens would not lay as well as they should, though they did fairly well, and in winter they really did better accordingly than in summer, for she fed a mash that contained about one-fifth meat meal. Having so many hens they could not find enough bugs to go round, and in their efforts to do so they would run over a wide territory and neglect their other feed. While she fed them plenty of grain they did not eat enough of it to produce the eggs for the protein was deficient. They also received more exercise than

was beneficial, using up the energy that should be expended in egg production in chasing after elusive grasshoppers and beetles. When a hen has to hunt over an acre lot to get a grasshopper she has no time to think of laying eggs.

On another farm the hens looked and acted as though they had never known a square meal. The farmer's wife killed a couple of four or five month old cockerels that were just as near skin and bones as it was possible for a chicken to be. I suppose they would have weighed a pound and a half, certainly they would not have weighed more than two pounds, and the meat was of very inferior quality. That farmer said that his hens would not lay at all except in the spring for a month or two. This farmer practically wasted feed on that flock, for he did not feed them enough to bring any appreciable results, but he did feed fully half as much as he would have had to feed to have had them doing their best.

Select for Egg Production.

Feeding settles itself into three degrees; less than enough to keep up the normal flesh and bodily vigor; enough for this but not enough for any surplus egg production, and all the hens will consume. Under the first plan the whole flock is a constant loss, for neither in meat or eggs will the product be worth as much as the feed consumed even though that is less than it should be. By the second plan there will be a normal production of both meat and eggs, and it will depend on the cost of feed if there is any profit. Usually they will break about even. The last plan is the one followed by commercial poultrymen, and the only one where a profit can be assured. With a steady egg production winter and summer, and a market that can only be developed when one has such a steady production the profits are fairly certain. My experience would indicate that a dollar hen can be considered a good average profit, and by planning to start a large number of pullets to laying in the fall each season this average can be raised. Selection for egg production and trapnesting the breeders will help.

Kansas.

L. H. COBB.

BLACKHEAD.

My turkeys are troubled with yellow diarrhea. They eat very little; their heads turn black; they get very weak and then die. I have done everything I can for them. Can you suggest something?

Emmett Co.

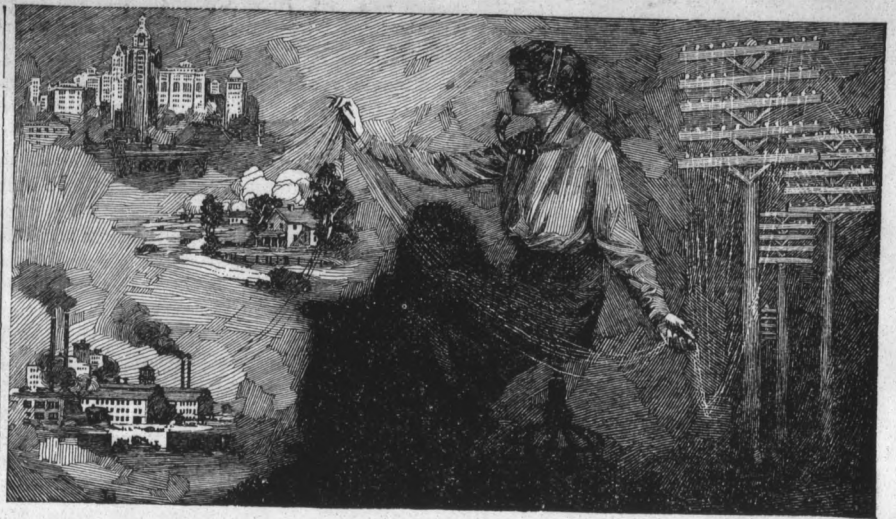
Mrs. J. D.

The head and comb turning black, and the diarrhea are symptoms of a common turkey disease known as blackhead.

It is a disease which affects the liver and the intestines and it is one of the numerous poultry troubles whose fundamental causes are improper feeding and unsanitary surroundings. The disease is quickly fatal to turkeys and has been the cause in some localities of the discontinuance of turkey raising.

The treatment consists of immediately isolating the sick birds, placing them in a dry, well lighted and clean place which is free from draughts. Only easily assimilated soft food should be given. Grain should be fed sparingly, especially corn. Over-feeding corn is the cause of many turkey troubles. Medical treatment is of little value in this disease.

Preventative measures are to keep the birds on fresh ground, isolate all birds not healthy, and destroy all dead birds. If the turkeys roost inside or are confined, keep the ground and the floor well sprinkled with lime. Be sure that the feed, water and surroundings are clean.



Weavers of Speech

Upon the magic looms of the Bell System, tens of millions of telephone messages are daily woven into a marvelous fabric, representing the countless activities of a busy people.

Day and night, invisible hands shift the shuttles to and fro, weaving the thoughts of men and women into a pattern which, if it could be seen as a tapestry, would tell a dramatic story of our business and social life.

In its warp and woof would mingle success and failure, triumph and tragedy, joy and sorrow, sentiment and shop-talk, heart emotions and million-dollar deals.

The weavers are the 70,000 Bell operators. Out of sight of

the subscribers, these weavers of speech sit silently at the switchboards, swiftly and skillfully interlacing the cords which guide the human voice over the country in all directions.

Whether a man wants his neighbor in town, or some one in a far-away state; whether the calls come one or ten a minute, the work of the operators is ever the same—making direct, instant communication everywhere possible.

This is Bell Service. Not only is it necessary to provide the facilities for the weaving of speech, but these facilities must be vitalized with the skill and intelligence which, in the Bell System, have made Universal Service the privilege of the millions.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
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One Policy

One System

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140 EGG INCUBATOR CHICK BROODER
Both are made of Both \$10
Calif. Redwood. For
Incubator is covered
with asbestos and galvanized
iron; has triple walls,
copper tank, nursery,
egg tester, thermometer, ready to
use. 30 DAYS' TRIAL—money back if
not O.K. Write for FREE Catalog Now.
IRONCLAD INCUBATOR CO., Dept. 117 Racine, Wis.

CORN FOR SALE
We offer for sale over 100,000 bushels good, sound, clean-shucked, assorted ear corn. We also ship in carload shipments oats direct from our farms. Write for quotations. The Northern Ohio Land Co., Paulding, Ohio

POULTRY.

BARRED ROCKS—Parks 200-egg strain stock and eggs in season. FRED ASTLING, Constantine, Michigan

Barred Plymouth ROCK COCKERELS, large, farm raised from prize winning flock. \$3 each, two for \$5. J. A. BARNUM, Union City, Mich.

Barred Rock Cockerels—200 big bushy vigorous birds. A few pullets. W. C. Coffman, R. 3, Benton Harbor, Mich.

Barred Rock Cockerels Bradley strain \$2.50 each or 2 for \$4. These are fine birds. Order at once. SAM STADEL, Chelsea, Michigan.

Bird Lawn Farm A few exhibition Buff Rock Hens for sale \$9 to \$10 each. S. C. Buff Leghorn Cockerels \$1.50 to \$3. Blue Orpington Cockerels \$3 to \$10 each. Our Buff Rocks won three firsts and one fifth Chicago 1914 on four entries. Bird Lawn Farm, Lawrence, Mich.

PRED-TO-LAY R. C. Rhode Island Reds, Breeding Cockerels. A few extra good ones from Vibert, 255 egg strain. J. C. Greene, St. Johns, Mich.

Ferris Leghorns—200 Egg Strain. One customer's flock averaged 102 eggs in six winter mos., another 181 eggs in 10 mos., another 199 eggs in 12 mos. You can do as well. Eggs, chicks, breeding stock from hens with records up to 264 eggs. Prize winners at largest shows. Prompt shipment, prices low, quality guaranteed. White Leghorns are best for eggs. We raise thousands. Free catalog and price list gives particulars. Write for it now. 16 years square dealing—thousands of pleased customers. FERRIS LEGHORN FARM, 934 Union, GRAND RAPIDS, MICH.

FOWLER'S BUFF ROCKS. Cockerels \$2 to \$5; hens \$1 to \$3. White Holland Turkey Toms \$5; hens \$3. R. B. FOWLER, Hartford, Michigan.

Golden Wyandotte Cocks and Cockerels, also a few F. W. ALEXANDER, Vassar, Michigan.

PINE CREST WHITE ORPINGTONS, why wait until Spring to purchase stock, by buying now, you get the benefit of reduced rates and get eggs all winter. Mrs. Willis Hough, Pine Crest Farm, Royal Oak, Mich.

Rose Comb Brown Leghorn Cockerels From Mad. Sq. and Mich. and Ohio State Fair winners \$1.50 each. CLAUDIA BETTS, Hillsdale, Mich.

RHODE ISLAND REDS and PLYMOUTH ROCKS. Males 5 to 12 lbs. according to age \$2 to \$5; P. R. hens weight 5 to 9 1/2 lbs. eggs 15 for \$1.00; P. R. eggs \$5 per 100. Mammoth Bronze Tom Turkeys, 8 to 88 lbs. according to age \$5 to \$25, 10 eggs \$3. A. E. Crampton, Vassar, Mich.

R. C. and S. C. R. I. Red Cockerels, W. Emden Geese R. B. O. Ducks and White African Guinea. Fine stock. Prices reasonable. O. E. Hawley, Ludington, Mich.

Silver Laced Golden and White Wyandottes. Fine a specialty. Circulars free. C. W. Browning, Portland, Mich.

SILVER WYANDOTTES, Large, vigorous cockerels Sat \$2, \$3, from Blue Ribbon and Sweepstake winners. Triangle Poultry Yards, H. J. Gettings, Hillsdale, Mich.

Standard bred S. C. W. Leghorn Cockerels, Pure White, five point combs. We won 1st cock, 2nd hen, State Fair this year. Prices \$2 to \$25. Wishbone Leghorn Farm, A. B. & J. M. Wiley, R. 6, Ann Arbor, Mich.

White Wyandotte a fine lot, male and female at low price and write your wants. DAVID RAY, 202 Forest Ave., Ypsilanti, Mich.

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

Thoroughbred White Holland turkeys for breeders. Mated or single birds. Hens \$3. Tom \$4. Hardy stock. Mrs. Ed. Colling, R. F. D. Millington, Mich.

White Holland Turkeys. Fine Large Healthy Stock. Toms \$6.00; Hens \$5.00. Alden Whitcomb, Byron Center, Michigan.

Mammoth Bronze Turkeys Toms \$6; Hens \$4. Fawn and White egg strain, \$1 each. Collar Bros, Conklin, Mich., R. 2.

CLOSING Out my White Indian Runner Ducks—V. R. Fishel strain. These ducks cost me \$5 apiece. Offering while they last. Drakes \$3; Ducks \$2. A rare bargain. RIVERVIEW FARM, R. 2, Vassar, Mich.

Pekin and Rouen Drakes \$2.00 each or 3 for \$5.00. Sheridan Poultry Yards, Sheridan, Michigan.

DOGS

FOX, COON, SKUNK AND RABBIT HOUNDS Broke to gun and field. Prices right. Fox and Coon hound pups \$5 each. Stamp for reply. H. C. LITTLE, Fredericksburg, Ohio.

HOUNDS FOR HUNTING—Fox, Coon and Rabbits, all ages. Send 2 cent stamp. W. E. LECKEY.

Annual Meeting of State Grange

ALTHOUGH the State Grange voted against the present public mental spasm—Preparedness—Washtenaw County Pomona and the city of Ann Arbor were entirely prepared to receive the State Grange delegates after a short notice of six weeks. The meeting was held in the Hill Auditorium of the University from December 14 to December 17 inclusive. The place was an ideal one and the hosts did everything to make it pleasant for the visitors. The University grounds and buildings were outside attractions which alone made the trip well worth while. It gave the Grangers an excellent opportunity to become better acquainted with their state university.

The action of the Grange on the matter of Preparedness was an indication of the stability and sanity of rural thought. It indicated that the farmer was not carried away by brainstorms and therefore his influence in national affairs worked for conservatism. The resolution passed with reference to this prominent subject was neither favoring "peace at any price" or extensive expenditures for army and navy purposes. It suggested that America already had a good standing among nations with reference to naval and military strength, and that we had better cling to the present program, which was prepared during times of calm thought. It was suggested, however, that this government could get much better results out of the money expended for army and navy purposes than they do at present, and the consensus of opinion was that the nation should make every effort to do this. The resolution as passed will be sent to all the Michigan senators and representatives, and it was urged that local Granges also get up petitions to send to representatives at Washington.

Other matters given prominence were those of temperance, the new state marketing law, and the tonnage tax. Every temperance clause was heartily supported, and the program as a whole indicated that the Grange is one of the potent factors in the development of the prohibition spirit. The Grange heartily endorsed the work of the anti-saloon league, and went on record as supporting a law which would have as penalty for driving motor vehicles while drunk the revoking of the license for the first offense and for the second offense conviction without the privilege of paying a fine. Its influence will be used to get newspapers to refrain from using liquor advertisements.

The discussion with reference to the new state marketing law was spirited. One faction contended that the law as it is now is not workable, but the

majority seemed to think that it was nothing but fair to give the law and the market commissioner a chance to make good, this office having been in operation only a few weeks before this session of the State Grange. The resolution favoring the changing of the law so that the market commissioner's work would come under the control of the State Dairy and Food Commissioner instead of under the Agricultural College as it is at present, was therefore laid on the table.

At the eleventh hour the tonnage tax plan brought out interesting discussions. Both those in favor of it and those opposed to it were strongly represented, but when the vote was taken the majority were in favor of the tonnage tax plan.

Among the other things which the State Grange favored was the establishment of standard health requirements in rural schools, the providing of visiting nurses and more and better instruction in agriculture and domestic science in rural school courses. The establishment of a home economics course at the University was also favored. On the matter of co-operation the Grange voted to lend its assistance to the organization of farmers' co-operative societies. This was in no way to interfere with the present Grange contract system, but was favoring the development of local co-operative enterprises, such as creameries, elevators, etc.

Strong for Rural Credits.

The enactment of a Federal rural credit law having the following features, a low rate of interest to be secured either by long time government loans direct to farmers or by government land-backed bonds, amortization of the loan in at least thirty years, was favored. In case the federal government failed to enact such a law, it was resolved that the Grange recommend to the Legislature a law for the governing of co-operative bank associations which would have the following features: No less than 25 members, each stockholder to have one vote regardless of the number of shares he held, the capital stock dividend be limited to seven per cent per annum, and the remaining net profits lay aside a reserve fund be distributed among members and customers according to their patronage.

Among the resolutions passed were those protesting against the present rearrangement of the rural routes and the free distribution of seeds, and those favoring the Palmer-Owen child labor bill, the creation of a public utilities commission to take the place of the present railroad commission, and the government ownership of telephones.

The master's address, given Tues-

day afternoon, was full of many good recommendations. With reference to the subject of peace, he said that no sane man would advocate action in any business matter based upon suggestions from a feverish, inflamed mind, but today when some of our greatest men are seeing red and talking about war preparations, it is time for a conservative body as the Grange to sound the strongest note it can to hasty, ill-considered and extravagant military and navy expenditures under the plea of preparedness. His attitude on this question was that the program of military and naval extension planned out two years ago in times of peace and clear thinking should be our ideal now. Spending three-fifths of our national income on war account and two-fifths on peace account is a limit beyond which a republic ought not to go. With reference to the readjustment of the rural delivery service, he said that by no possible means can this branch of postal service be made self-supporting, that the motive of rural free delivery should be service rather than profit. Any readjustments made without careful consideration of roads, weather conditions and market centers are bound to be unsatisfactory, and therefore the Grange should ask a most painstaking consideration of this matter by the present Congress.

A matter of vital importance to the welfare of the six and a half million farmers of this country is that of rural credits. While all the political parties have declared for it, but the Grange should stand back of such a law as will serve the borrower rather than the lender, and will furnish promptly an adequate credit for the six and a half million farmers, and rates of interest that are lower than the prevailing ones and equal throughout the country.

The Standard Grange.

The success of the plan of giving premiums to individual members of subordinate Granges for securing new members and reinstatements led the State Grange to enlarge upon the plan and set into motion the standard Grange idea. This idea was suggested by that of the standard school which is now so popular among rural schools. Fifteen requirements are to be taken as the basis for a standard Grange, five of which will be fixed and ten optional. To earn the title of Standard Grange a subordinate Grange will have to qualify in each of the five fixed requirements and also in any six of the ten optional requirements. The State Grange will offer a suitable reward to each Grange earning the title, and it is expected that the plan will prove a great incentive to better Grange work for 1916.

(Continued next week).

Farmers' Clubs

REPORTS TO ASSOCIATIONAL SECRETARY.

The secretaries of all local Farmers' Clubs who have not yet reported to the associational secretary giving Club statistics and other information asked, should do so at once. All delinquent Clubs are requested to pay dues promptly, and all Clubs which are not at present members of the state organization and wish to affiliate with the State Association of Farmers' Clubs will be welcomed into the organization at this time. Address the the secretary for all necessary information.

Mrs. Jos. S. Brown,
Howell, Mich.

THE ASSOCIATIONAL MEETING.

(Continued from last week).

Our report as published in the last issue covered the sessions devoted to routine business and discussions, the results of which were embodied in the report. The subsequent sessions of the meeting were most entertaining and instructive and will doubtless be dwelt on at greater length by the delegates present in reporting to their respective Clubs.

The Tuesday afternoon session was of particular interest to the ladies present, including a talk on Home Economics and extension work by Miss Raven, of M. A. C.; a paper on Literary Clubs and the Woman of the Farm Home, by Mrs. H. W. Bumps, of the Flushing Farmers' Club, and one on Michigan Birds, by Mrs. Edith E. Munger, of Hart, while Miss Carol Walton, of Ann Arbor, spoke on Michigan's Effort to Prevent Tuberculosis.

The closing program was particularly strong, including as it did an address by the personal representative of the Secretary of Agriculture, and another by the governor of the state, following an address on the topic, "A Fertile Soil Means a Prosperous Agriculture," by W. H. Keddy, of the Long Lake Farmers' Club.

In results accomplished and in promise for the future the past year has been a notable one in the history of the Farmers' Club movement in Michigan. There has been an unusual interest in the movement by those not previously affiliated with the movement, as shown by the number of Clubs organized during the year, while the plan advocated for promoting Club extension during the coming year promises still greater expansion before the date of the next annual meetings.



Officers of the Michigan State Grange.

Standing, left to right—George B. Horton, chairman executive committee; N. P. Hull, executive committee; Peter Klees, gatekeeper; W. H. Lovejoy, assistant steward; Mrs. C. H. Anderson, Flora; J. W. Hutchins, executive committee; Miss Jennie Black, Ceres; W. F. Taylor, executive committee; Mrs. I. E. Corless, Pomona; C. H. Bramble, overseer; C. S. Bartlett, executive committee; T. H. McNaughton, executive committee; Frank Coward, treasurer; William Welsh, executive committee; T. E. Niles, steward.

Sitting, left to right—Mrs. O. J. C. Woodman, chaplain; Miss Jennie Buell, secretary; John C. Ketcham, master; Mrs. Dora Stockman, lecturer; Mrs. W. H. Lovejoy, L. A. Steward.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

DO not imagine that the young man who achieves success in the world had every advantage to start with, or that his ship had smooth sailing always and was never becalmed. Only a few of our great men had the advantages of money and education.

While in bed with pillows as a backrest, Robert Louis Stevenson wrote a majority of his famous novels and es-

says. He was an invalid but he succeeded in spite of his difficulties.

Lord Nelson, the famous British admiral, was the son of a minister whose salary was not sufficient to support his family.

Some Self-Made Men

By CAROL C. CRAIN.

Bunyan, author of "Pilgrim's Progress," was a traveling tinker. He suffered religious persecution and wrote the book while imprisoned.

William T. Sherman, the noted military leader, was the son of a widow

and was adopted and supported by his father's friend.

The English evangelist, Charles Haddon Spurgeon, did not have a college education but his sermons were published in many languages.

By curtailing his expenses for food, Benjamin Franklin was enabled to buy books which he diligently studied both day and night.

Elihu Burritt became a great lingu-

WORLD EVENTS IN PICTURES



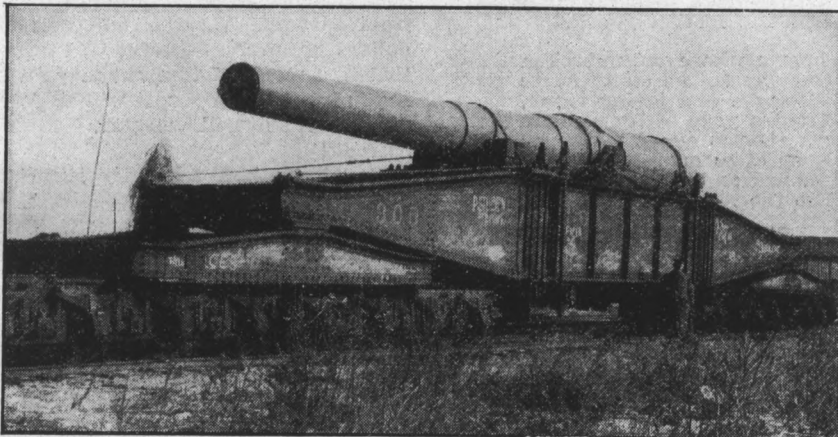
Ice Skating is Sounding the Death Knell of the Tango.



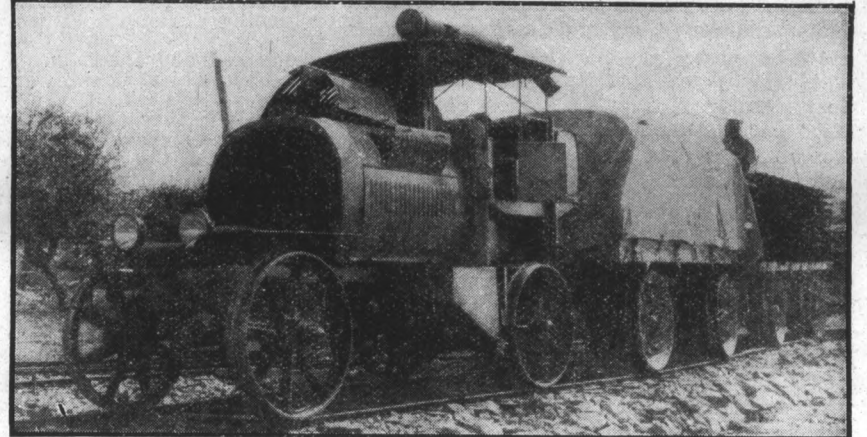
The Busy Season for Kris Kringle.



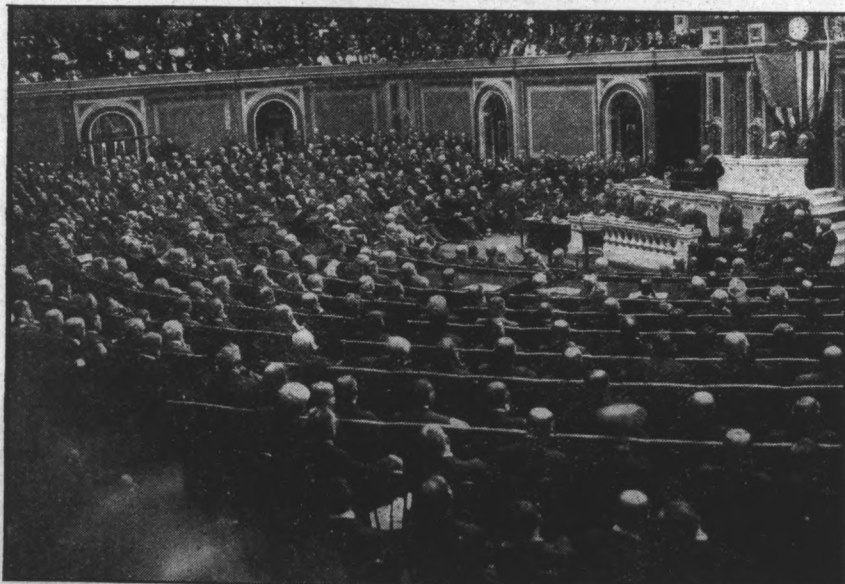
Rep. Kitchen, Majority Leader in the House of Representatives.



Biggest Sixteen-inch Gun in the World to be used at the Panama Canal is Ready for Test at Sandy Hook.



Austrian Machinists Devise Truck that may be used on Rails or Wagon Roads for Transportation of War Munitions.



Scene at the Opening of the Sixty-fourth Congress as President Wilson was Reading his Message.



Suffragists Gathered on East Steps of the Capitol Building at Washington to Present Monster Petition to President Wilson.

ist by using spare moments as he worked at the forge of his father's blacksmith shop. He studied well.

Abraham Lincoln read law by candle-light, and at times he walked 20 miles to procure certain books which he urgently desired.

These men were always eager to learn what qualities produced greatness and success. Above all, they did not lose sight of the fact that it is no

disgrace to be born of a poor or obscure family, and this handicap obliged them to follow ways of industry.

Napoleon, the greatest soldier of France, was poor and often out of employment in early life. At the zenith of his power, he said: "My maxim has always been—a career open to talent without distinction as to birth." Napoleon became great by his own efforts.

(Our New Serial Story)

Light of Western Stars

By ZANE GREY

CHAPTER IV.—(Concluded).

"Well, if you want to know, and if it's any of your mix—yes, I was pretty drunk," replied Stewart.

It was a cool speech that showed the cowboy in control of himself and master of the situation—not an easy speech to follow up with undue inquisitiveness. There was a short silence.

"Confound it, Stewart," said the speaker, presently. "Here's the situation. It's all over town that you met my sister last night at the station, and—and insulted her. Jack's got it in for you, and so have these other boys; but it's my affair. Understand, I didn't fetch them here. They can see you square yourself—or else, take your medicine. Gene, you've been on the wrong trail for some time, drinking and all that. You're going to the bad; but Bill thinks, and I think, you're still a man. We never knew you to lie. Now what have you to say for yourself?"

"Nobody is insinuating that I am a liar?" drawled Stewart.

"No."

"Well, I reckon I'm some glad to hear that. You see, Al, I was pretty drunk last night, but not drunk enough to forget the littlest thing I did. I told Pat Hawe so this morning, when he was curious; and that's some polite for me to be to Pat. Well, I found Miss Hammond waiting alone at the station. She wore a veil, but I knew she was a lady, of course. I reckon, now I think of it, that Miss Hammond found my gallantry some startling, and—"

At this point Madeline, answering to unconsidered impulse, eluded Florence and walked out upon the porch. Sombreros flashed down and the lean horses jumped.

"Gentlemen," said Madeline, rather breathlessly, and it did not add to her calmness to feel a hot flush in her cheeks, "I am very new to western ways, but I think you are laboring under a mistake, which, in justice to Mr. Stewart, I want to correct. He was rather—rather abrupt and strange when he came up to me last night, but, as I understand him now, I can attribute that to his gallantry. He was somewhat wild and sudden and—sentimental in his demand to protect me, and it was not clear whether he meant his protection for last night or forever; but I am happy to say he offered me no word that was not honorable. And he saw me safely here to Miss Kingsley's home."

CHAPTER V.

Madeline Hammond was alone in the little parlor with the brother whom she had hardly recognized.

"Majesty!" he exclaimed. "To think of your being here!"

The warmth stole back along her veins. She remembered how that pet name had sounded from the lips of this brother who had given it to her.

"Alfred!"

His words of gladness at sight of her, his chagrin at having failed to welcome her at the station, did not recall old times as clearly as did his brotherly embrace. Just so had he clasped her on the day when he left home, and she had not forgotten. But

now he was so much taller and bigger, so dusty and strange and different and forceful, that she could scarcely think him the same man. She even had a humorous thought that here was another cowboy bullying her, and this time it was her brother.

"Dear old girl," he said, more calmly, as he let her go, "you haven't changed at all, except to grow lovelier! Only you're a woman now—and you've fulfilled the name I gave you. How the sight of you brings back home! It seems a hundred years since I left. I missed you more than all the rest!"

With his every word Madeline seemed to feel that she was remembering him. She was so amazed at the change in him that she could not believe her eyes. She saw a bronzed, strong-jawed, eagle-eyed man, stalwart, superb of height, and, like the cowboys, belted, booted, spurred. There was something hard as iron in his face, which quivered with his words. It seemed that only in those moments when the hard lines broke and softened could she see resemb-

The Bells, glad bells are a-ringing,
In a world of steeples swung;
The songs, glad songs a-singing
In the lands of every tongue.
And round the firesides gleaming
In a world of happy homes,
With glad some greetings teeming,
The returning Christmas comes.

O time bedecked and freighted
With the thoughts of days of yore!
O day with past days mated
And the friends that are no more!
Thy very griefs we cherish;
Down the vista of the years
The sharpest sorrows perish,
And a smile shines o'er our tears.

lance to the face she remembered. It was his manner, the tone of his voice, the tricks of his speech, that proved to her he was really Alfred.

She had bidden good-by to a disgraced, disinherited, dissolute boy. Well she remembered the pale, handsome face with its weakness and shadows and careless smile, with the ever-present cigarette hanging between the lips. The years had passed, and now she saw him a man. The west had made him a man! Madeline Hammond felt a strong, passionate gladness and gratefulness—and a direct check to her suddenly inspired hatred of the west.

"Majesty, it was good of you to come. I'm all broken up. How did you ever do it? But never mind that now. Tell me about that brother of mine."

Madeline told him, and then about their sister Helen. Question after question he fired at her. She told him of her mother; of Aunt Grace, who had died a year ago; of his old friends, married, scattered, vanished. But she did not tell him of his father, for he did not ask.

Quite suddenly the rapid-fire questions ceased. He choked, was silent for a moment, and then burst into tears. It seemed to her that a long-stored-up bitterness was flooding

away. It pained her to see him—pained her more to hear him.

In the succeeding few moments she grew closer to her brother than she had ever been in the past. Had her father and mother done right by him? Her pulse stirred with unwonted quickness. She did not speak, but she kissed him, which, for her, was an indication of unusual feeling.

When he recovered command over his emotions, he made no reference to his breakdown. Nor did she; but that scene struck deep into Madeline Hammond's heart. Through it she saw what he had lost and gained.

"Alfred, why did you not answer my last letters?" asked Madeline. "I had not heard from you for two years."

"So long? How time flies! Well, things went bad with me about the last time I heard from you. I always intended to write some day, but I never did."

"Things went wrong? Tell me." "Majesty, you mustn't worry yourself with my troubles. I want you to enjoy your stay, and not be bothered with my difficulties."

"Please tell me. I suspected something had gone wrong. That is partly why I decided to come out."

"All right—if you must know," he began; and it seemed to Madeline that there was a gladness in his decision to unburden himself. "You remember all about my little ranch, and that for a while I did well raising stock? I wrote you all that. Majesty, a man makes enemies anywhere. Perhaps an eastern man in the west can make, if not so many, certainly more bitter ones. At any rate, I made several. There was a cattleman, Ward by name—he's gone now—and he and I had a little trouble over cattle. That gave me a pretty serious backset. Pat Hawe, the sheriff here, has been in-

O circles snapped and broken
Since the holly last was there
And "Merry Christmas" spoken!
O ye homes with empty chair!
The bells, glad bells are ringing
In a world of steeples swung;
The souls, glad souls are singing
In a life forever young.

O homes where yet unbroken
Once again the circle forms
With smile and loving token,
From a year of life's rough storms
Swift time is silent winging,
Keep alive love's roses fair
With bud and blossom springing
Ere the sad and empty chair.

strumental in hurting my business. He's not so much of a rancher, but he has influence at Santa Fe and El Paso and Douglas. I made an enemy of him. I never did anything to him. He hates Gene Stewart, and I spoiled a little plot of his to get Gene into his clutches; but the real reason for his animosity toward me is that he loves Florence, and Florence is going to marry me."

"Alfred!"

"What's the matter, Majesty? Didn't Florence impress you favorably?" he asked, with a keen glance.

"Why, yes, indeed. I like her, but I did not think of her in relation to you—in that way. I am greatly surprised. Alfred, is she well born? What connections?"

"Florence is just a girl of ordinary people. She was born in Kentucky and brought up in Texas. My aristocratic and wealthy family would scorn—"

"Alfred, you are still a Hammond," said Madeline, with uplifted head.

Alfred laughed.

"We won't quarrel, Majesty. I remember you, and in spite of your pride you've got a heart. If you stay here a month, you'll love Florence Kingsley. I want you to know that she's had a great deal to do with straightening me up. Well, to go on

with my story. There's Don Carlos, a Mexican rancher, and he's my worst enemy. He's also an equally bitter enemy to Bill Stillwell, who is my friend, and one of the finest men on earth. I got in debt to Don Carlos before I knew he was so mean. In the first place, I lost money at faro—I gambled some when I came west—and then I made unwise cattle deals. Don Carlos is a wily greaser, he knows the ranges, he has the water, and he is dishonest. So he outfigured me, and now I am practically ruined. He has not got possession of my ranch, but that's only a matter of time, pending lawsuits at Santa Fe. At present I have a few hundred cattle running on Stillwell's range, and I am his foreman."

"Foreman?" queried Madeline.

"I am simply boss of Stillwell's cowboys—and right glad of my job, too!" "Isn't it possible to reclaim your property?" Madeline asked. "How much do you owe?"

"Ten thousand dollars would clear me and give me another start; but, Majesty, in this country that's a good deal of money, and I haven't been able to raise it. Stillwell's in worse shape than I am, I'm sorry to say."

Madeline went over to Alfred and put her hands on his shoulders.

"We must not be in debt!"

He stared at her as if her words had recalled something long forgotten. Then he smiled.

"How imperious you are! I'd forgotten just who my beautiful sister really is. Majesty, you're not going to ask me to take money from you?"

"I am."

"Well, I'll not do it. I never did, even when I was in college, and then there wasn't much beyond me."

"Listen, Alfred," she went on, earnestly. "This is entirely different. I had only my allowance then. You don't know that since I last wrote to you I have come into my inheritance from Aunt Grace. It was—well, that doesn't matter; but I haven't been able to spend half the income. It's mine. It's not father's money. You will make me very happy if you will consent. Alfred, I'm so—so amazed at the change in you! I'm so happy! You must never take a backward step from now on. What is ten thousand dollars to me? Sometimes I spend that in a month. I throw money away. If you let me help you, it will be doing me good as well as you. Please, Alfred!"

He kissed her, evidently surprised at her earnestness; and indeed, Madeline was surprised herself. Once started, her speech had flowed.

"You always were the best of fellows, Majesty! If you really care—if you really want to help me—I'll be only too glad to accept. It will be fine! Florence will go wild! Majesty, pretty soon some titled fellow will be spending your money. I may as well take a little before he gets it all," he finished, jokingly.

"What do you know about me?" she asked, lightly.

"More than you think. Even if we are lost out here in the woolly west, we get news. Everybody knows about Anglesbury; and there's that Lord Castleton, who has the running now, I understand. How about it, Majesty?"

Madeline detected a hint that suggested scorn in his gay speech; and deep in his searching glance she saw a flame. She became thoughtful. She had forgotten Castleton—New York—society.

"Alfred," she began, seriously, "I don't believe that anyone with a title will ever spend my money, as you elegantly express it."

"Confound the money! I don't care for that! It's you!" he cried passionately, and grasped her with a violence that startled her. He was white; his eyes were like fire. "You are so splendid—so wonderful! People called you the American beauty, but you're more

(Continued on page 583).

Christmas--By J. A. KAISER

Land O' Nod Stories.

By HOWARD T. KNAPP

Ants That Fly

O H-H-H look, Tinker, there are a lot of flying ants," cried Billy Be By Bo Bum as the tunnel leading down into the underground city made a sharp turn and they ran smack into a whole troop of ants with beautiful, gauze wings folded neatly on their backs.

"Yes, yes, I know, but there is nothing unusual about that," replied the merry little elf without even glancing at the new arrivals. "The city is full of these useless fellows, and you will see thousands and thousands of them before you have been here an hour."

"Well, I never saw one before, and you haven't told me what kind of ants they are," persisted Billy. "Are they a different tribe from the others?"

"Not at all," replied Tinker. "They are merely the royal brothers and sisters of every ant in the city."

"But why don't the other ants have wings and why do you call them royal?"

"My, but you can ask a lot of questions," laughed Tinker, "but that is the way to find out about things you don't understand. I call these winged ants 'royal' because every one of the females will some day become a queen and have a city of her own, while the winged males will be their husbands—for a day or two. While they are young they live here in the home city with the workers, but some day they will have to leave home and strike out for themselves and found new cities. So to enable them to make the journey easily, Old Mother Nature, who is always thinking up ways to help her children, has given them wings. But as the workers stay at home and take care of the city and never go on long journeys, they do not need wings, so they are born without them."

"Then the workers are really a different kind of ant from their winged brothers and sisters?" asked Billy.

"They are and they aren't," Tinker replied. "You see, Billy Boy, there are really three kinds of ants hatch out from the eggs laid by the Queen Mother. First there are the true females, little princesses who will grow up to be queens and rear families and have a city of their own. Then there are the males, the men ants, who never do any work and whose sole mission in life is to marry the princesses, and last of all there are the workers, who are neither male or female, for they are unable to lay eggs."

"Don't the young princesses or the men ants do any work at all?" asked Billy in surprise.

"Nary a bit," replied Tinker, nodding his head so hard that the weeny copper kettle he wore for a hat bounced up and down at a great rate. "Until they are old enough to leave home and shift for themselves, they do nothing but play from morning until night. They are the most helpless creatures alive, and the most lazy. They depend on the workers for everything, even to feeding and washing them, and as there are thousands and thousands of these helpless fellows in the city, you can just imagine how hard the workers have to labor to care for them and do all their own work, too."

"There is so much work to be done about the city that the ants could never begin to do it all if they didn't have such a perfect organization. Each ant or group of ants has its own particular task to do, and they all work together, each helping the other, so that in the course of a day they accomplish a great amount of work."

"Hundreds of ants are constantly engaged in enlarging the city by building new galleries. Others act as nurse-

maids for the thousands of baby ants and care for the eggs laid by the Queen Mother. Of course, these ants are too busy to go out to the harvest fields and gather their own food, so the troops of foragers we met in the oat forest and on the road have to gather enough food for the workers in the city as well as for themselves. So you see they do not have much time to waste. But come on, we must hurry or the queen will get tired of waiting for us."

And next week I'll tell you how Billy met the Queen of the Ants.

I WONDER.

BY APOLLOS LONG.

I've wondered long, I wonder yet
How Santa on his yearly call
Gets on the housetop, dry or wet,
And down the flue without a fall?

I see his picture year by year,
He always looks so neat and trim,
I wonder how he can get thru,
And have no black soot stick to him?

I hung white stockings just to see,
But not a speck of soot could find,
I wonder how he gets all black
And don't leave any mark behind?

Another thing that troubles me,
We have a furnace that is new,
And do you think he'll find the way,
And come up by the hot-air flue?

How can he bring so many things?
I fear he uses magic art,
For once I know he brot to me
A pony and a pony cart.

Of course, he did not put them in
My stocking, that was far too small,
And so he left them at the barn,
I found the pony in the stall.

How can he bring such heavy things?
He has to carry them so far,
From the north pole, why just last year
He brot a great big touring car.

I'd think his team would get a fright,
You know that deer are timid things
It's queer they are not frightened at
Some of the stuff that Santa brings.

I wonder if they'd run away
And spill the load from night till morn,
If Santa's boys, on mischief bent
Should beat a drum, or toot a horn.

There's lots of things I want to know
About the why, and where, and when,
Of things I do not understand,
There are so many more, and then

His sleigh has runners, you can see,
But they must be of magic kind;
It's funny, too, about the deer,
For neither leaves a track behind.

I thot I found one by the gate,
And followed hard upon the track,
Perhaps I'd find him on the road,
And if I did I'd bring him back.

I ran, I guess, a half a mile,
And then I saw a team ahead,
I looked, then turned and started back—
'Twas Tommy with his goats and sled!

But still I know that Santa comes,
Altho I never had a peep
At team, or sled, or jolly Saint,
He comes when children are asleep.

THOUGHTS OF THINKERS.

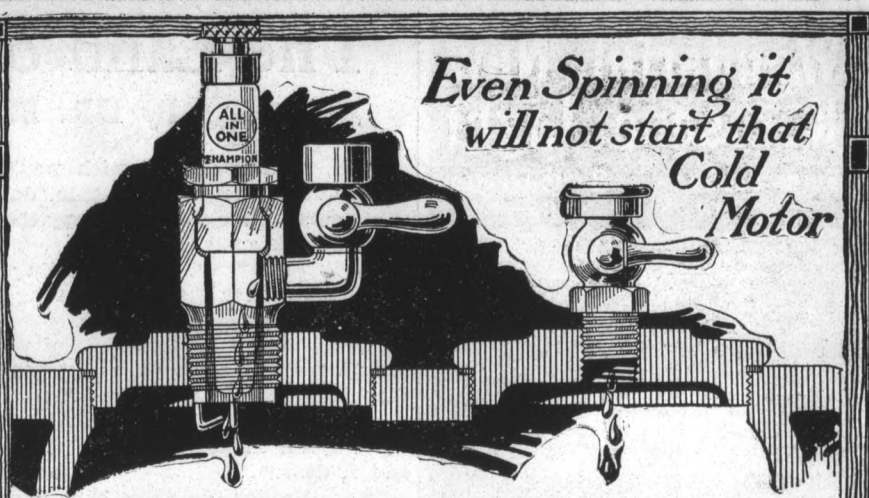
Education will not make people happy unless it is directed into useful channels.—Lord.

If you would not be known to do a thing, never do it.—Emerson.

Talents are absolutely nothing to a man except he have the faculty of work along with them.—Lowell.

The blessed work of helping the world forward happily does not wait to be done by perfect men.—George Eliot.

Despotism is a legitimate mode of government in dealing with barbarians, provided the end be their improvement and the means justified by actually effecting that end.—Mill.



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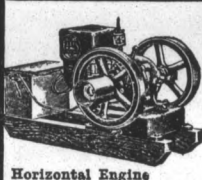
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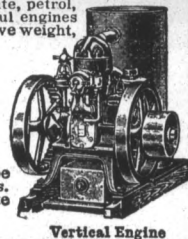
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The Land of the Reindeer

By DR. B. N. OXENIUS.

O H, mother dear, I wish we had our old farm back again, down south. We were so happy there ad had such good times."

My little boy and I were sitting in the twilight near the stove, resting after a day of strenuous work.

"Yes, honeyboy, I wish we were back there, too, among our old friends especially now at Christmas time. It is pretty lonely in a big, strange city, but we will make the best of it, you and I, dear."

"Say, Mother, do they have farms in Sweden, too, where you came from? Maybe it is too cold to raise anything there."

"Why, dear, it isn't much colder there than in Michigan, and we could raise almost anything but corn and watermelons at home and I lived very near the Arctic circle, too."

"Mother, tell me something about your home, dearest, you always said it was so beautiful there."

"Well, sonny, it is beautiful, no matter at what time of the year you see it, but I like best to go there at the spring of the year, when the snow is melting and the trees are budding and the farmers begin to make ready for the spring plowing."

"The days are getting longer and longer and it seems like the sun is afraid to go to rest, she has so much to do during the short summer time. She must help the farmer ripen the barley and rye, the oats and wheat, to say nothing about the potatoes, turnips and all the other kind of vegetables, same as we grow in this country."

"But have you just as fine fruit as we have here?"

"Yes, dear, it grows just as sweet and delicious as here. We have fine apples, pears and cherries, and lucious berries such as currants, gooseberry, strawberry, raspberry and the wild blueberry, cranberry, and many other kinds not growing in this country. In the southern part of Sweden we can even grow plums, peaches, grapes, and walnuts and hazelnuts are growing wild in many parts of the country."

"Don't you think, my boy, that this is a pretty good crop from the land of snow and ice?"

"But it is also the land of the 'Midnight Sun,' where there is light both night and day and everything is growing so fast you can almost measure the growth by inches during a night."

"But the farmer does not depend altogether on his fields for his living. On every farm there is always a herd of good milch cows, besides sheep, goats, hogs and some poultry."

"After midsummer, up in the north, they always bring the cattle up to the mountains and keep them there during the summer, grazing the rich vegetation on the mountain plain. The girls who tend the cattle have a busy time up there, caring for the milk and making it into butter and different kinds of cheese, which later on are brought down to the farm and sent to market."

"In the meantime the farmer is busy harvesting his crops, first of all hay, clover, timothy, vicker, etc., after that comes the grain crop and later on in the fall potatoes and other underground vegetables."

"The more well-to-do farmer uses up-to-date machinery such as we see in this country, some of it is imported, but most of it is manufactured in Sweden. In many villages where the farms are small, the farmers buy a set of machinery and use it all in turn, each one helping the other."

"When harvest time is over and winter days are coming, another busy time begins for the farmer out in the woods where he cuts timber and hauls it to the mills. Charcoal burners

make ready their supplies, because charcoal is a very important article for the blacksmith and the foundries."

"In the farm house the women, besides attending to their household duties, feeding and milking the cows, are quite busy spinning wool and flax to yarn and from one of the side chambers you can always hear the loom going, where the yarn is made into bolts of linen or durable homespun clothes."

"Before Christmas time we always had a week of butchering, curing and smoking the meat for winter supplies and baking the dry, hard rye bread without which no housewife could get along."

"In the evening after the chores are done and the whole family gathers around the open fireplace, the girls with the spinning wheels or their knitting and the men either mending some tools or fixing some new ones, then you will realize that you have come to the land of the 'Sagas and songs.'"

"Then some old grandmother will tell you some wonderful story of folklore, of the fairies and 'Tomte-Nisse,' the little invisible dwarf man who is so very fond of mischief but always helps the one in need."

"After a while maybe one of the boys takes down the old fiddle from the wall and plays one of those lively folk-dances that makes your feet move in spite of yourself. How could you help it? Or maybe he would play some of those wonderful folk melodies, old as the mountain and the river, but always in a minor key and the melody goes right down in your heart and makes you homesick when you think of it, and awaken a longing in you for the wonderful springtime in the Northland."

"Then comes the blessed Yuletide. Well you will know what a real Christmas is if you have spent one with me in the land of the reindeer."

"Early on Christmas morn between three and four o'clock you have to be up because it is far to the church, many miles away, and the sleigh is ready and the horse, shaking the merry sleighbells, tells you to hurry up."

"After a bounteous breakfast, you are bundled in furs up to the top of your head, because it is very cold. The snow and the stars are shining like brilliants, lightening up the dark woods you have to travel through for miles and miles."

"In every house you pass there are lighted candles in the windows like so many bright eyes calling to you a silent Merry Christmas. And now you are here at the church, so bright and cheerful with the many lights and candles and Christmas trees on each side of the altar."

"From the organ peals forth the old, beautiful hymn, 'Be Greeted blessed Christmas Morn,' and you can almost see the Christ child stand there with his hands stretched out over all the people and join in the singing, 'Peace on earth, good will towards men.'"

"This is the Yuletide in the land of the reindeer and the land of the Midnight sun."

LIGHT OF WESTERN STARS.

(Continued from page 586).

than that. You're the American girl! Majesty, marry no man unless you love him, and love an American. Stay away from Europe long enough to learn to know the men—the real men of your own country!"

"Alfred, I know what too many of those international marriages are, and I hope that Helen does. I am afraid she'll be miserable if she marries Anglesbury."

"It'll serve her just right!" declared her brother. "Helen was always crazy for glitter and adulation."

"Anglesbury is a gentleman, but it is money that he wants, I think. Alfred, tell me how you came to know about me, away out here? You may be assured I was astonished to find that Miss Kingsley knew me as Majesty Hammond!"

"I dare say it was a surprise," he replied, with a laugh. "I told Florence about you, and gave her your picture. Of course, being a woman, she showed the picture and talked. She's in love with you. Then, my dear sister, we do get New York papers out here occasionally, and we can see and read. You may not be aware that you and your society friends are objects of intense interest in the U. S. in general, and the west in particular. The papers are full of you—and perhaps a lot of things you never did!"

"That Mr. Stewart knew, too. He said, 'You're not Majesty Hammond?'"

"Confound his impudence!" exclaimed Alfred, and then again he laughed. "Gene is all right, only you've got to know him. I'll tell you what he did. He got hold of one of those newspaper pictures of you, and, in spite of Florence, he wouldn't fetch it back. It was a picture of you in a riding-habit with your blue-ribbon horse, White Stockings—remember? It was taken at Newport. Well, Stewart tacked the picture up in his bunk-house, and named his beautiful horse Majesty. All the cowboys knew it. They would see the picture and tease him unmercifully; but he didn't care. One day I happened to drop in on him, and found him just recovering from a carouse. I saw the picture, too, and I said to him:

"Gene, if my sister knew you were a drunkard, she'd not be proud of having her picture stuck up in your room!"

"He swore, and asked me if I thought you'd be proud of it if he didn't drink. Of course I told the simple fellow yes. Majesty, he didn't touch a drop for a month; and when he did drink again, he took the picture down, and he has never put it back."

Madeline smiled at her brother's amusement, but she did not reply. She found it difficult to adjust herself to these queer, free, western ways. Her brother had eloquently pleaded with her to keep herself above a brilliant but sordid marriage, yet he not only allowed a cowboy to keep her picture in his room, but actually spoke of her and used her name for a temperance lecture.

Madeline could not wholly repress a feeling of disgust; and yet she could not help sympathizing with her brother in his naive gladness over the subtle suggestion which persuaded Stewart to be good for a month.

Something made up of Stewart's insolence to her; of Florence Kingsley's frank reception of her as an equal, of the elder sister's slow, quiet, easy acceptance of this visitor who had been honored at royal courts; of that faint hint of scorn in Alfred's voice, and his amused statement in regard to her picture and the name Majesty—something made up of all these stung Madeline Hammond's pride, alienated her for an instant, and then stimulated her intelligence, excited her interest, and made her resolve to learn more about this incomprehensible west.

(Continued next week).

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Scarlet Fever.

OF all the so-called children's diseases none is more dreaded by most parents than scarlet fever. Not that the disease in itself is so alarming, nor necessarily fatal, but because it is so apt to leave behind weaknesses which cling to the child for years, possibly through life. Eye troubles, deafness, affections of the throat, lungs, heart and kidneys, often follow even mild cases of scarlet fever, and it is because of these after-effects that the disease is so dreaded. Many deaf mutes can trace their affliction to an attack of scarlet fever.

While scarlet fever is a contagious disease, children are not so susceptible to it as they are to measles. Statistics show that only about one-half of the children exposed catch the disease. Very little babies seldom contract it, but from infancy up to five years the susceptibility increases, diminishing after the fifth year.

A great many ideas are afloat as to how the disease is spread. It seems to be generally admitted that it is not conveyed by the patient's breath, but by the excretions from the body, mucous, perspiration, urine, etc., and by the scales in desquamation, or "peeling" as it is popularly called. Nowadays the patient is always carefully isolated and the house quarantined, but it is rare indeed that a person who does not come in contact with the patient, spreads the disease, even though living all the time in the same house. It is often spread by milk taken from the infected house, and sometimes by flowers from the sick room. The nurse often, and doctor occasionally spread the disease as they come in direct contact with the patient.

The first symptoms of the disease may usually be noticed in from two to six days after exposure, though in some cases three weeks elapses between exposure and the outbreak of the disease. The usual symptoms are first, sore throat, rising temperature, headache, vomiting, followed in from 12 to 36 hours by a rash. This rash consists of tiny red points, appearing usually first on the neck and spreading over the face and body. Sometimes the whole body is covered, though very often the eruption is slight, appearing only in the groins and over the thighs and buttocks.

The rash lasts from three to seven days, then disappears. This is followed soon afterwards by desquamation. This desquamation, or peeling, is one of the most important characteristics of the disease. In many cases the other symptoms are so unpronounced and the rash so slight or altogether missing that it is only when the child begins to desquamate that the physician can be really sure he has a case of scarlet fever. Instances have been known where the disease was diagnosed as acute indigestion in the beginning, but desquamation began in a week and lasted over a period of seven weeks.

The peeling on the face and trunk is usually only in the form of fine scales and if the patient is bathed frequently it is scarcely noticeable. On the hands and feet, however, where the skin is thick, it is much more pronounced, sometimes the sole of the foot coming off almost entire.

The patient should be kept isolated as long as this is going on, as these scales will spread the disease. It must not be forgotten, however, that the mucus from the throat and nose will spread it just as surely. All gauze used should be burned and the patient not allowed to expectorate except in sputum boxes, which can be burned, or in receptacles which are carefully disinfected. Cases where a catarrhal affection follows the disease should be carefully watched as long as the catarrhal symptoms continue.

It is very rare that a person has two attacks of scarlet fever, though there are a few instances where this occurs. Relapses often occur, usually

during desquamation. These are often milder than the first attack, though sometimes they prove fatal.

With the first symptoms of the disease the mother should send for the best physician within reach and abide religiously by all his directions. Even in the mildest cases there is danger of inflammation of the kidneys or trouble with the ears which may lead to deafness. The early symptoms of these disorders can only be detected by a physician, and no matter how slight the rash or little the rise in temperature, a good physician should be in attendance.

Of course, not every attack of scarlet fever is followed by after complications. There are cases where delicate children are much stronger after an attack of scarletina than ever before. But knowing the danger every mother should watch for it. DEBORAH.

The One World Day

ONCE more the day of days. For, however we regard it, as an old pagan festival or as the birthday of him who "came to seek and to save that which is lost," we can not get away from the influence of the Christmas spirit. "Peace on earth and good will to man" is in the air, and whether we will or no, we are subconsciously affected by it. Believer and unbeliever observe the day and wish each other a "Merry Christmas" with equal heartiness.

Whoever started the day, old pagan or early Christian, we are glad it was done, and glad that the brotherhood feeling has kept it alive and handed it down through the ages. Its spirit has been sadly warped at times when men and women gave only because they hoped to receive again. But now that a broader feeling of humanity prevails, when bands of "good fellows" have taken up the needs of the poor and made it a day to do for the destitute instead of giving to prosperous friends, we rejoice that the message of love has been handed down.

A better Christmas spirit prevails. Time was when the churches had a tree loaded with presents for the faithful members and their families. Now

they tell their members, young and old, to come bearing gifts for those who would otherwise receive none. The children hand to Santa Claus their cherished toys or warm clothing to give to other less fortunate little ones, and themselves go empty-handed from the churches. And it is not the broken toys and discarded garments which are handed over. Even the children have caught the true Christmas spirit and give of their best.

So, instead of the old Christmas where for days and weeks ahead, we were haunted by the fear that we might overlook someone who would give to us, and for weeks after we were harried by the Christmas bills still unpaid, we have come into a blessed holiday time, where we give what we can afford to those we know can never make returns, which is the only true giving after all. Without any talk about it we have arrived at a safe and sane Christmas. A Christmas which is indeed a merry one, because we have the consciousness of having done good and lack the worry of having overdone.

We are brothers with all, and for one day at least the old world knows "Peace, good will to men." DEBORAH.

With Paint Pot and Brush

By R. S. MILLER.

THERE are few things that add more to the neatness of a home and buildings than fresh finishings. Few of us have the new dull, natural finished wood, because old houses predominate and the old house seems a rather hopeless proposition, when it comes to any redecorating, and yet the woman with a little taste and not an undue endowment of "elbow grease," in conjunction with a paint pot and brushes, may accomplish wonders.

This has just been discovered by the Young Person. She set to work one day with a linoleum finish, for she couldn't seem to get anyone else interested in it. The work went along so rapidly that she was quite delighted with it. She declared it easier to put on the fresh finish than to clean the floor, and it really seemed to get done about as quickly as a floor could be washed, although, of course, the

washing had to be done before the finish should be applied. The linoleum finish saves a great deal of wear on the linoleum and more than pays for itself in that one way, let alone the satisfaction of having the linoleum look fresh and clean again. If this linoleum finish were kept and a little applied as needed, we believe such a floor covering might practically last—well, almost forever.

Perhaps in speaking of linoleum floor coverings a word about them might not be out of place. We have used linoleum for many years. Our first experience was with a brown body and white figures, but the figures wore off very rapidly and the plain brown body, while good looking when clean, showed the dust and dirt to a great degree. A friend in doing over her house bought plain linoleum at first, a dull green and another color that harmonized with her furnishings,

but she soon learned that the plain surfaces, while easy to clean and attractive looking, showed dirt and dust to a distressing degree. A figured linoleum, in which the figures seem even with the base, gives promise of better wear than one where the figures are very clearly off the surface. A mixed-up patterns shows the dirt less than one with plain, solid figures in the tile pattern.

Another thing about linoleum is that the inlaid goods do not always give the satisfaction one naturally expects of them. A man of experience in a large department store told the writer that, unless one bought the most expensive of the inlaid linoleum, the satisfaction was not assured, and even then, where a linoleum is used much and requires cleaning often, the inlays were apt to disintegrate and come out, or separate from the balance of the goods.

To lay linoleum, it should be well warmed before unrolling. If spread when cold it is liable to crack or split. It is much better to have an entire floor covered, because this does away with the seeping of water or the creeping of dirt under the edges, these things cause the edges to rot away. If one must use a partial covering it should be finished with the brass edges sold for the purpose. The linoleum should lie on the floor a week or more before being tacked in place that it may adjust itself to the floor. If tacked at once there are apt to be places where the floor sags a little, or maybe shows a little unevenness, and the linoleum will puff up and soon crack out in these places. After the linoleum is fitted to the floor it should be cut to thresholds and registers or such spaces as may occur and these edges be bound with the regular binding. All the long edge spaces where they meet the wall should simply have a quarter round of wood put over them and this round nailed in place. This holds the linoleum taut and covers the edges so that no chance for dirt or water is offered.

If one keeps the pieces cut out over hot air registers, these may be slipped into place for summer use, shutting out the register, and maintaining the finish of the floor. These may even be glued or pasted to the registers for temporary use.

The linoleum should be finished with two coats of the regular varnish used for this purpose right at the start. Many complain that linoleums are hard to clean, but if kept well varnished or finished this is not so. We have found that a little coal oil put into the water for washing the linoleum helps in cleaning, and if not much soiled, a quart or two of milk, added to the water gives a good shining look to the linoleum.

If one can't have the natural finish wood which is so much to be desired, one may put on an imitation finish which looks very well. There are many preparations used for this purpose, but a light oak finish does pretty well for most common rooms. The paint must be gone over with a priming which is furnished for the purpose. We have found, however, that the yellow ochre often advised for such work makes a too dark undercoating, and should be modified, or a deep cream or light yellow paint be used under the final finish. Any knots in new woodwork may be smeared

over with shellac, which makes them invisible in the finished work, otherwise they will be apt to show.

These oak finishes dry rapidly and a room need not be out of use very long in order to undergo a renewing. Paint put on in the afternoon will be dry enough for the oak finish the next morning and if this is done then the room will be fit to use that evening, possibly not wholly dry, but dry enough not to be spotted by a touch.

One may give a sort of grained effect by simply "wobbling" the brush in putting on the final effect. A very little trial will show one how to do, to get the little apparent wood grain. Window frames seem to wear off more than any other part of the woodwork and these should have an extra coat of paint or finish, and if rough should be rubbed with pumice stone or emery paper.

We have used the oak finish over white and even over a light blue under-surface and the result was not bad, but it is better over a light or dull yellow paint. Nail holes may be filled up with putty and shellaced over.

One may get various colors of art finishes and so have the rooms in harmony with the furnishings. An upstairs room has a floor finished in green, the woodwork is white, and the iron bed is white. This is to be gone over with a finish prepared for such purposes. The walls are of rough plaster.

Old floors are probably the worst problem where one wishes to make things look a little like new. Of course, if these are very bad little can be done except to cover with rugs or carpets, and even then one should use a carpet lining, or paper, under these. In case the floors are not worn, but the cracks are very much in evidence, these cracks may be cleaned out and filled with a prepared wood-filler or be filled with putty and the putty shellaced. Then put on the floor finish wanted, using paint or a wood finish or an art color as desired. Where the light oak finish is used for the woodwork the same color used as the floor finish does very well.

There is now on the market a heavy paper which sells for something like 60 cents a roll for eight yards. This is grained like an oak wood and is made to paste on the floor on the outside of large rugs. After it is dry it is finished with several coats of clear floor finish, and if kept well glazed will last for quite a period of time, the places where much treading comes, as near much used doors, etc., should be covered with small rugs or be very frequently covered with the finish.

Old wooden chairs take on a new lease of life by being painted, and the oak finish used on woodwork looks very well. Any loosened rungs may be made solid by using glue, and sometimes even by painting the ends and pressing them into place, letting dry thoroughly before using.

To redress furniture takes some time and more work, but it often is worth while. One may even make in-harmonious pieces of furniture all in harmony by a little careful selection of wood finishes. Do not make the mistake of varnishing over a really good piece. We have known cases where mahogany bureaus were so varnished over they could not be recognized. Old pieces of furniture may well be examined, because one may possibly have something very much worth while in some old bit of furnishing.

JANUARY IN THE HOUSE GARDEN.

BY FRANK H. SWEET.

Time to slip geraniums, coleus and carnations that you want to set out in the spring. For geraniums, use a flower-pot with good drainage, filled to within an inch of the top with nicely sifted loam, topped off with an inch of river sand. Make your geranium slips four inches long, the stockier the bet-

ter. Stick them in half way beneath the soil, leaving two leaves on.

Plants in the house dry out very quickly this month on account of the dry atmosphere of the room. The colder the weather the more water a house plant needs. Don't water a plant until it is dry, but when you do water it, water thoroughly.

Spray your house plants with good, clean water. Or, if it isn't convenient to take them to the bathroom, sponge them off. In a warm, dry atmosphere, such as one gets in the house in January, red spiders are apt to multiply at a great rate. The spraying or sponging will keep them in check. Watch your palms, aspidistras, and dracenas for this little pest. Wet the under sides of the leaves, where the spiders lurk.

There may be some scales on your ferns. If there are, clean them off with a small tooth-brush.

Any insects on the house plants? You can get rid of them by using soap in the water.

Use soot water twice a week on the house plants. It is a good fertilizer. The proper strength is a handful of soot in two gallons of water.

House plants need fresh air, but do not admit a draft of air directly over or among the plants. Open a door or window at some distance from the plants. Let in the air two or three times a day.

When sweeping cover the plants with a light cloth or newspaper in order to keep off the dust.

Pull down the window shade at night between the plants and the glass, in order to prevent the plants being nipped by frost.

Warm the water for the calla. The water ought to be the warmth of your hand. Don't use chilly water on any of the plants.

When the chrysanthemums are through blooming, put them down the cellar.

Don't let the hanging plants and fern balls get dry. They need more water than the potted plants do, for they are more exposed to evaporation on every side. Get the head of the family to blow tobacco smoke through your plants occasionally. He will help in keeping the plants free from the aphids. Keep the seed-pods picked off the fuchsias if you want them to bloom steadily.

WOMEN IN EXECUTIVE POSTS.

Women hold many executive educational positions in the United States, according to the Bureau of Education's directory for 1915-16 just issued. It shows that of the 12,000 conspicuous positions, largely of an administrative character, 2,500 are held by women. These women are college presidents, state and county superintendents of education, directors of industrial schools, heads of departments in colleges and universities, directors of schools for afflicted, and librarians.

Twenty-four out of 622 colleges and universities are presided over by women. Of the nearly 3,000 county superintendents 508 are women. Of the 70 institutions for the blind 15 are directed by women. Of the 75 state schools for the deaf, 10 are under the leadership of women; and of the 22 private institutions of the same character 16 have women superintendents. Of the 31 private institutions for the feeble-minded, 20 are supervised by women.

Fourteen out of 86 directors of industrial schools are women, and 48 of the 200 schools of art are in charge of women. Out of 1,300 public and society libraries, women supervise 1,075.

Of the 33 bureau officials in the Bureau of Education itself 11 are women.

To remove the odor of onions from the breath eat parsley and vinegar; from the hands rub a piece of celery over them.—M. A. P.

HOW TO GET THIS \$2.25 ALUMINUM GRIDDLE AT A SAVING OF \$1.40

Get 50 cents worth of Karo from your grocer, and send the labels to us together with 85 cents and we'll send you this \$2.25 Solid Aluminum Griddle by prepaid parcel post.

HERE is a clean cash saving of \$1.40—and thousands of housewives have already taken advantage of this remarkable chance to get an aluminum griddle for less than the wholesale price.

This Aluminum Griddle needs no greasing. It doesn't chip or rust. It heats uniformly over entire baking surface—doesn't burn the cakes in one spot and leave them underdone in another. It doesn't smoke up the kitchen—and the cakes are more digestible than when fried in grease.

At great expense we are seeking to place a Karo Aluminum Griddle in the homes of all Karo users, so that Karo—the famous spread for griddle cakes and waffles—may be served on the most deliciously baked cakes that can be made.

You know Karo, of course. Nearly everybody does—65,000,000 cans sold last year alone. And you doubtless know the wonderful cleanliness and durability of Aluminum ware.

If you are a Karo user already then you know all about this wonderful syrup—you know how fine it is as a spread for bread; how delicious it is with griddle cakes, waffles, hot biscuits and corn bread.

Get 50 cents worth of Karo from your grocer at once, and send the labels and 85 cents (P. O. money order or stamps) to us and get one of these Aluminum Griddles by prepaid parcel post.

Remember that our supply is going fast—so get your Karo today. We will also send you free one of the famous Corn Products Cook Books.

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BOYS WATCH.

Every boy, young or old, would be proud to carry one of these watches. It is 16 size, with a nickel case. Stem set and wind. Regular watch movement with hair spring. Guaranteed by the makers and repaired free of charge for one year, if given ordinary care. Any boy who really wants a watch can easily earn one in one afternoon.

The watch alone free for sending three subscriptions to the Michigan Farmer.

The Michigan Farmer, 1 year \$1.50
Boys Watch, value 1.00
Or with the Michigan Farmer 3 years \$1.65, 5 years \$2.15.

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Beacon FREE Burner

FITS YOUR OLD LAMP.
100 Candle Power Incandescent pure white light from (kerosene) coal oil. Burns either gas or electricity. COSTS ONLY 1 CENT FOR 6 HOURS. We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Burner FREE. Write today. AGENTS WANTED.

HOME SUPPLY CO., 28 Home Bldg., Kansas City, Mo.

Fish Direct From Our Nets

1st—The Highest Quality.

2nd—The Lowest Cost.

Silver Herring, Round 3c; Dressed 3½c; Pickerel, Round, Extra Fancy, 5½c; Bayfish, Round 2c; Bluefish, Dressed 4c; Smoked Bluefish, 10 lbs. 70c; 20 lbs. \$1.50.

WISCONSIN FISHING CO., Dept. Y, Green Bay, Wis.

We Guarantee Best Quality

New Frozen Lake Superior Herring

In sacks \$3.25 per 100 lbs., in boxes \$3.50 per 100 lbs. Pickerel \$6.50 per 100 lbs., 50 lbs. \$3.50. Pike \$3.50 per 100 lbs., 50 lbs. \$3.50. New salted Lake Herring \$3.50 per 100-lbs. keg, 50 lbs. \$2.00.

AERIAL FISH CO., Duluth, Minn.

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A pair of mated EVERBEARING STRAWBERRY PLANTS FREE if you will report as to your success with them. Will bear loads of big, red, berries from June to November. We have counted 480 berries, blossoms and buds on a single plant. A postal will bring the plants, also enough seed of the new CEREAL FETTERITA to plant a rod square of ground. Also a plot of perennial ORIENTAL POPPY seed. Send 10 cts for mailing expense or not, as you please. Write today and get acquainted with THE GARDNER NURSERY COMPANY Box 745, Osgo, Iowa.

Government Farmers Wanted \$30 to \$125 monthly. Free Living Quarters. Write, OZMENT, 17 F. St. Louis.

HAVING solved the question of systematic distribution, the Exchange set about to invite people to eat more oranges and lemons. This was done through a carefully planned national advertising campaign in which the inherent health qualities, the low cost, the universal distribution and other points were set forth. They had a good product and they did not purpose to sit back and wait for people to find it out in their own slow way.

Advertise Sanely.

Mr. R. J. Grassley is manager of the Exchange Advertising office in Chicago. To the writer he explained the aims and methods of conducting the annual \$275,000 advertising campaign as follows:

"Primarily the aim of our advertising is to increase the consumption of oranges and lemons, regardless of whether they are from California or elsewhere. The attempt to make people specify our particular kinds is secondary, for there necessarily will be just so much citrus fruit to be eaten and a reluctance on the part of the public to consume any one portion would soon drag down the entire market. It is our aim to make our brand of citrus fruit of the highest possible quality, and we employ a special field force to constantly study the industry and locate possible opportunities for improvement of the cultural and handling methods.

Assist the Jobbers.

"The Exchange does not believe in working to eliminate the jobber or the retailer. On the contrary, we maintain a special department to help members of the trade in every possible way.

"Our advertising and promotion work is costing the growers about one and one-half cents per box, or six-tenths of one per cent of the gross value of the fruit. This we consider not as an expense, but rather as an investment for the future of the industry. One reason why we feel that our work has been highly successful is that in the last ten years while the population of the United States increased only 21 per cent, the consumption of California oranges has increased 74.6 per cent.

"In our special lemon campaign which we will start next year we are facing a tremendous proposition. At present this country and Canada consume together about 12,000 cars of lemons per year. Ordinarily half of these come from foreign countries. Within a period of about four years our lemon output will develop into approximately 16,000 cars per year. You see we have got to make people use two lemons where they now use one, and one where they do not now use any."

Schooling a Nation.

No other organization attempts to handle the large industrial problems which affect the future stability of the industry. The Exchange has created through national advertising a public recognition of the delicious quality and healthfulness of oranges and lemons, and is giving the public the reasons why they should use California citrus fruits and is suggesting to them the ways in which they can be served.

There is nothing mysterious about advertising. It supplements the Exchange salesmanship and service to the jobber and the retailer by telling the public the truth about the fruit which the Exchange has to sell. It has met with the hearty approval of the trade because it helps the jobber and retailer to sell the fruit. The Exchange, through its agents and advertising department, is co-operating with the jobbers and their salesmen by developing selling arguments for citrus fruits. It co-operates with the retailer by furnishing him with attractive window display material showing the uses of oranges and lemons; in showing the retailers how to make a beautiful display of fruit, to attract the consum-

er; and how to increase his business and eliminate losses from decay and left-overs by quick sales of his purchases through reasonable prices at odd cents per dozen.

New Selling Agencies.

New factors, such as chain stores, are being interested in the sale of citrus fruit and large quantities are being handled by such firms on very low margins. This service is fundamentally sound because it creates better merchandising methods, a larger consumption of fruit and especially of Exchange fruit, and in the end a larger return to the Exchange grower. It is absolutely essential to the prosperity of the industry. It can be handled by the Exchange, because the small volume handled by other shippers makes the national advertising of their brands prohibitive. It is included in the Exchange marketing cost,

must be incurred by an organization that assembles the fruit in the cities, distributes it to the retailers, and develops a country trade. The jobber also acts as a banker for the retail dealer, and supplies a large proportion of the capital which the retail dealer uses.

Make it Possible for Jobber to Handle at Less Expense.

To operate economically, the fruit jobber has to distribute the overhead charge over a number of perishable products, including citrus and deciduous fruits, bananas, pineapples, small fruits, potatoes, vegetables, and other commodities, because a wholesale distributing business, or a retail business cannot succeed when the entire overhead is charged against a single perishable crop. A disaster like the freeze in 1913 would have bankrupted the citrus industry had the growers

Farm Commerce.

Producers Educate the Nation

By DON FRANCISCO.

What Shall We Do With the Jobber?

There are those who would sentence him without trial.

Others feel inclined to tolerate him.

Still others declare that the jobber is an essential link in the chain of distributing agents.

Mr. Francisco tells us on this page why the Exchange is trying to help the jobber to handle fruit on a smaller margin.

That is, this highly developed producer's co-operative association is extending co-operation so as to include the distributor.

which, on account of the volume of business handled, can cover a nationwide advertising campaign, a nationwide distributing system, a highly efficient business organization, all included in a marketing cost lower than any other shipper charges and not more than one-third to one-half as much as shippers charge who make a personal profit by handling the growers' product.

Why they Sell to Jobbers.

The Exchange was born of necessity and it has passed through all the disturbances that are liable to inflict themselves upon a co-operative organization. Not long ago a small group of growers began preaching the worn-out slogan, "Eliminate the Middleman." But the Exchange had made a careful study of retail and jobbing conditions and met the clamor with positive arguments and cool figures.

The Exchange does not sell the fruit to the retail dealer because it would cost the grower more to perform the function of the jobber if a wholesale distributing system were to be built on a single perishable crop that is variable in supply and condition and subject to climatic disaster, than it now costs through the jobbing system already established. The jobber performs a distinct function that must be performed by someone in assembling the fruit in the towns and cities, in developing trade with the countless retail dealers in the rural districts and cities, and in blanketing the credit and other distributing risks for the producer.

The Exchange fruit is handled by 2,500 carlot jobbers, who employ at least 7,500 traveling salesmen in pushing and developing trade in the small towns and rural districts. The expense of an average traveling salesman is approximately 3,000 per year. The fixed charge of the jobber includes store rent, carting, interest on capital invested, insurance, taxes, salaries, wages, cartage of fruit, repacking and losses from decay, credits, bad debts, traveling salesmen and other overhead expenses and these charges

been liable for rents, salaries and the fixed charges necessary to a wholesale distributing organization. The Exchange is endeavoring, through co-operation with the jobbers, to reduce the unnecessary cost of distribution. The jobbers' gross margin, including all overhead charges and profit, represents approximately eight per cent of the consumer's dollar, or an average mark-up of approximately 14 per cent on the purchase price. The jobbing cost varies in different sections of the country, just as the Exchange cost varies. The cost depends on local business arrangements and conditions, the size of the business, the size of the city, and outside territory covered, and largely on the grade and soundness of the fruit which he buys. Uneven distribution by the producer, uneven grades and decay, strike at the foundations of a successful fruit business and always raise the margins, which the jobber or retailer must add to cover the added risk.

Costly to Retail Single Crop.

The Exchange does not sell to the consumer because a retail business founded on a single perishable crop is as impracticable as it seems desirable. The delivery of goods of any kind to 100,000,000 American consumers is the most costly of all distributing items. The consumer usually pays from 25 to 50 per cent of the purchase price for the service which the retail dealer renders. He pays it because he demands the service and is not satisfied to deal with a store that does not render it. To incur the necessary fixed charges that would be required to serve 100,000,000 consumers as efficiently as they are now served, with oranges and lemons alone, would, of course, be prohibitive, even if the fruit was owned by a single corporation. To attempt it with no legal right to arbitrarily fix prices or handle the distribution arbitrarily, would be destructive to their investments.

The Exchange has a supply company which is a stock corporation of \$1,500,000, the stockholders being the local associations. This company was or-

ganized eight years ago because the price of box shook almost doubled in one year. After the company began the manufacture of boxes the box-making interests quickly reduced their prices to former levels. The company provides the supplies used in the packing-houses and the orchards, these being furnished at cost, including a depreciation and maintenance plus six per cent on the capital. The company has developed into a large institution, purchasing and manufacturing several million dollars worth of supplies per year. No less than 150 carloads of wrapping paper, 50 carloads of nails, 12,000,000 boxes and \$400,000 in fertilizer are delivered to the growers each year by the supply company. Its operating cost is only three-fourths of a cent per dollar.

It has just formed a similar organization to be known as the Exchange By-Products Company. Its chief value will be in the utilization of coarse and unmarketable lemons in the manufacture of lemon oil and citrate of lime.

The operations of producing and marketing crops of citrus fruits naturally fall within four distinct stages: (1) producing; (2) harvesting and packing; (3) transportation, and (4) marketing. Neglect or mismanagement of any one of these stages may nullify all the advantages of successful or painstaking work in the others. Meritorious Product First Essential.

The most important requisite for the successful marketing of a fruit crop is that it reaches the market and the consumer in sound condition. "Soundness" means freedom from all bruises, abrasions, as well as freedom from decay or deterioration. Soundness becomes of even more importance than quality, because unsoundness detracts tremendously from the appearance of the package, and depending upon the extent of unsoundness as shown by the presence of decay to a greater or less extent there is a direct loss to the purchaser. There is still another effect of unsoundness, which is perhaps the most important of all. This is the effect of continued unsoundness on the reputation of the grower or the shipper, which cannot be stated in terms of dollars and cents, because its effects are so gradual and long continued.

Careful Handling Imperative.

The importance of soundness having been established it becomes necessary to indicate upon what facts this desirable element depends. Soundness, as the citrus fruit growers of California and Florida have had impressed upon them through the medium of the investigations of the U. S. Department of Agriculture, depends upon many factors other than the natural or intrinsic keeping qualities of the fruit itself. Citrus fruits possess naturally, under normal conditions, the best shipping and keeping qualities of any class of fruits. No other class of fruit will as successfully withstand the effects of the various processes of market preparation through which most citrus fruits are passed. They may be passed through the various processes of picking, grading, washing, drying, brushing, wrapping, packing and shipping without serious detriment to their keeping qualities, provided these operations are all carried on without breaking or seriously injuring the skin of the fruit. A sound, healthy, unbroken skin is the only sure resistance the fruit has against the decay plague. The importance of carrying on all the various operations of harvesting, cleaning, packing and shipping without injuring the skin of the fruit can not be too strongly emphasized. There is need for the utmost care throughout, and any lowering of the standard of handling is sure to be followed by serious loss, as many growers and associations have found, much to their sorrow, and financial loss.

Investigations into the marketing of the citrus crop show figures which are

interesting to those handling other crops. Summarized the data shows that 36.5 per cent of the consumer's dollar is returned to the growers in California, of which 9.8 per cent represents the proportion allotted to picking, hauling and packing; 20.5 per cent represents the allotment to transportation; 1.5 per cent the grower's cost of selling the jobber, and 41.5 per cent the proportion represented by the jobbing and retail gross distributing costs, the latter representing four times as much as the former.

The amount of the consumer's dollar allotted to each factor referred to should not be confused with the cost of handling each of these items. The average cost of picking and hauling

a packed box of oranges from the grove to the packing house is 10.5 cents; the average cost of packing and loading on the cars is 32.4 cents per box; the average cost of freight and refrigeration is 90.7 cents per box; the average grower's cost of the co-operative method of selling, including advertising, is 6.6 cents per box; the average mark-up of the retailer is 49.8 per cent on his purchase price, both of the latter figures including the loss from decayed fruit.

Probably if all businesses in fruits and vegetables were handled on the same basis as that of California's citrus industry the world would be much better off and the cost of living materially reduced.

Programs for Rural Credit Legislation

THERE are several viewpoints as to mobilizing rural credits for the benefit of agriculture. There is one view that adequate compensation for farm products, would enable the industrious trained farmer to adequately finance himself, like the grocery clerk who secures local credit at the bank and credit in the purchase of goods. In other words, it is like the Bohemian laborer in the beet fields who, after some time as a laborer purchases a farm on a long time credit. Knowing the beet raising business he can calculate on the fixed price for his crops and pay for his land. Aside from the other advantages of the sugar beet industry it has by the very reason of fixed prices enable men to secure farms where uncertainties of product prices would have been hazardous.

In the south and southwest where a single crop like cotton predominates, with interest rates high, and impoverished soils, many are land poor, they cannot sell, some form of state or federal aid is asked for. Nor is their argument lacking in logic. The cities, business and transportation are built largely on agriculture and when agriculture languishes so does all business.

The irrigation districts have had money advanced from government sources, where there was no money locally, now why not for soil restoration as well as soil irrigation. The Civil War destroyed southern resources and for nearly a quarter of a century the problem of maintaining the white civilization and establishing social conditions engrossed the attention of the southland. The average cotton cropper pays 20 per cent interest, and is fully a year behind in the capital necessary to grow a crop. In other words, when he pays the country merchant for the advances made out of the crop sold, he has no capital to begin planting the crop for the season following. The tariff question he has always regarded as a means of adding to the cost of what he buys, mainly to the advantage of the northern manufacturer. He sees the postal savings banks loan money to the banks at 2 1/4 per cent and he feels that government aid in some form to lower the rate of interest and enable him to become a land owner, would be but equal recognition.

The corn belt economist who has seen land double and triple in value within the last two decades fears that government aid or lower interest rates would be but another boost to land prices and instead of aiding the landless man to get a farm would put it still more and more out of his reach and actually be to the detriment of the buyer. The low price of land in the southern states seems to be no aid or incentive to the buyer and less tenants become landowners than occurs in the corn belt on land high in price.

The collegiate attache bewails the increase in tenantry but offers no consolation beyond his analysis. He regards government action in the man-

ner of aid to land banks as is extended to the reserve banks as dangerous. As a southern man of the business world observed, "many reputations rested on a supposed cautious attitude toward public questions and that 'safety first' carried to the extreme would result in never moving a train. The same men who regarded federal aid to agricultural land banks by way of extended credit on approved mortgages cheered to the echo government owned merchant vessels as advocated by Assistant Secretary of Agriculture Vrooman.

If there can be said to be any approved idea of rural credits it is to organize national land banks without capital possibly attached to or associated with the present national bank system. These land banks will underwrite farm mortgages just as the large city banks do any issue of bonds and being attached to the national bank system can then get a dip into the federal reserve system of credits. The method of underwriting by a bank without capital remains to be worked out.

J. N. McBRIDE.

CROPS OF 1915.

Corn was planted on 108,321,000 acres, the second largest area ever planted, and the harvest was 3,054,535,000 bushels, the second largest crop ever grown. Its value was \$1,755,853,000, exceeding that of the previous most valuable corn crop by \$33,000,000.

New records were made in production by wheat, oats, barley, rye, sweet potatoes, rice, and hay, while tobacco closely approached its production record, 1,103,415,000 pounds, made in 1910. Each of these crops, in addition, established records as being the most valuable ever grown, except in the case of barley and tobacco.

Production of the first billion-bushel wheat crop and the second three-billion-bushel corn crop were features of the year. Wheat acreage aggregated 59,898,000 acres, or 6,000,000 more than ever before. The yield was 16.9 bushels an acre, the largest acre yield for winter and spring wheat combined ever attained in this country. The final estimate of production was 1,011,505,000 bushels, with a value of \$930,302,000. The crop exceeded last year's which was a record, by more than 120,000,000 bushels and by \$50,000,000 in value.

Oats, rye, potatoes, sweet potatoes and tobacco all were planted on record areas. Oats exceeded its record production of 1912 by 122,000,000 bushels and its record value of 1914, by \$56,000,000. Barley production was 13,000,000 bushels more than the 1912 record crop and was worth \$4,000,000 more than the former most valuable crop, grown in 1914. Rice passed the 1913 record by 3,200,000 bushels and its 1912 record value by \$1,700,000.

Sweet potatoes exceeded by 14,000,000 bushels the 1910 record and were worth \$3,100,000 more than the 1913 value record. Hay showed a 12,500,000-ton increase over the record crop of 1912 and was worth \$55,600,000 more than the value record made that year.

The potato crop received perhaps the most severe setback of the year. Farmers planted a record acreage to potatoes, but the outturn was only 359,103,000 bushels. That was 61,500,000 bushels below the record year and 50,800,000 less than last year. The value of the crop, however, is established at \$22,000,000 more than last year.



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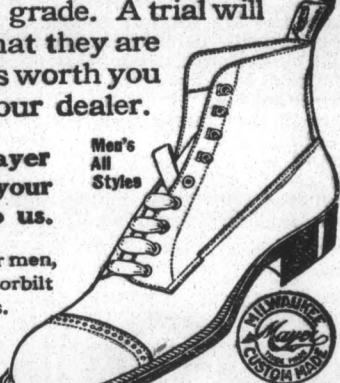
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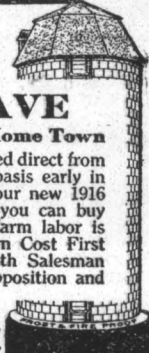
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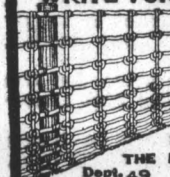
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Markets.

GRAINS AND SEEDS.

December 21, 1915.

Wheat.—Prices continue to advance, notwithstanding an increase of 11,000,000 bushels in the American visible supply. This large increase was due partially to including in the visible, wheat afloat at Buffalo. The strong market resulted very largely from the big foreign demand. Despite the activity of British agents in Canada and the United States, it seems impossible to prevent a decrease in the stocks at Liverpool. Besides, millers in this country and in Europe are anxious buyers, due to a strong demand for flour. Argentine cargoes are scarce. One year ago the local quotation for No. 2 red wheat was \$1.24½ per bushel. Last week's quotations were:

	No. 2 Red.	No. 1 White.	May.
Wednesday	1.19	1.16	1.24½
Thursday	1.20½	1.17½	1.25½
Friday	1.19	1.16	1.24½
Saturday	1.20	1.17	1.25½
Monday	1.23	1.20	1.28½
Tuesday	1.24½	1.21½	1.31½

Chicago.—December wheat \$1.24; May \$1.24½.

Corn.—The expectations of heavy receipts depressed corn values, despite the strength in wheat. Values, however, are above those of last week. A year ago No. 3 corn was quoted locally at 67½c. Last week's Detroit prices were:

	No. 2 Mixed.	No. 3 Yellow.
Wednesday	69	70½
Thursday	70	71½
Friday	71½	73
Saturday	71½	73
Monday	70½	72
Tuesday	70	71½

Chicago.—December corn 70.1c; May 74c per bushel.

Oats.—A decrease in the estimated surplus of oats from Argentine aided the market for this cereal at the opening this week. There is also a good domestic demand and foreign inquiry is helping to maintain prices. Standard oats a year ago were quoted locally at 52c per bushel. Last week's quotations are:

	Standard.	No. 3 White.
Wednesday	46	44
Thursday	46	44
Friday	46	44
Saturday	46	44
Monday	46	44
Tuesday	46	44

Chicago.—December oats 42.1c per bushel; May 45.5c.

Rye.—Unchanged at 97c for No. 2. **Peas.**—At Chicago market is steady and firm at \$2.35@2.60 per bushel, sacks included.

Barley.—Milwaukee's price for the malting grades is 63@69c and Chicago's is 60@70c.

Beans.—No trading here in beans and board quotes cash at \$3.55; Dec. \$3.45; January \$3.35. The situation probably warrants higher quotations than these. At Chicago the trade is quiet but firm. Pea beans, hand-picked Michigan stock \$3.85@3.95; prime \$3.70@3.75; red kidneys \$4.65@4.75.

Clover Seed.—Prime spot and December \$12.05; March \$11.95; prime alsike \$10.25. At Toledo cash and December \$12.25; prime alsike \$10.35.

Timothy Seed.—Steady at \$3.80 for prime spot.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$6.20; seconds \$6; straight \$5.60; spring patent \$6.50; rye flour \$5.80.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$22; standard middlings \$25; fine middlings \$30; cracked corn \$30; corn and oat chop \$28 per ton.

Hay.—No. 1 timothy \$18@19 a ton; \$17@18; No. 2 timothy \$15@16; No. 2 standard timothy \$17@18; light mixed \$17@18; No. 1 mixed \$14@15; No. 2 mixed \$10@12; No. 1 clover \$10@12.

Straw.—Wheat and oat straw \$6.50@7; rye straw \$7.50@8 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—The demand is active and prices are 1½c higher. Offerings of high grade product are small. Extra creamery 34c; firsts 32½c; dairy 22c; packing stock 18c.

Eggs.—No change in prices, the shortage of fancy fresh creamery is keeping the price up. The quotation, based on sales, is 34c.

Chicago.—The market is holding

firm with no change in prices except for fancy creamery which continues to be scarce. At present prices storage stock moves well. Extra creamery is 33½@34c; extra firsts 31@33c; firsts 26@30c; extra dairies 30c; packing stock 19@19½c.

Eggs.—The feeling is very firm but prices are unchanged. Receipts are light. Current receipts are quoted at 30c; candled firsts 31c.

Chicago.—Prices are ½c higher. The business is moderate and receipts light. New-laid eggs are especially scarce. Firsts 29½@30½c; ordinary firsts 27½@28½c; miscellaneous lots, cases included 22@30c; refrigerator April extras 22@22½c.

Poultry.—All kinds of poultry except turkeys are plentiful. Turkeys are higher, other prices remain unchanged. Turkeys 17@18c; spring turkeys 23@24c; fowls 9@11½c, according to quality; spring chickens 11½@12c; ducks 15@15½c; geese 14@15c.

Chicago.—Supply and demand are both good. Turkeys are higher but fowls and springs are lower. Turkeys young and old 18c; fowls 9@11½c; springs 12½c; ducks 14@14½c; geese 10@14½c.

FRUITS AND VEGETABLES.

Apples.—The demand is good and prices are higher for the good stock Greenings at \$3@3.50; Spys \$4@4.50; Baldwins \$3.50@4; Steel Red \$5@5.50. At Chicago the market is steady and the supply is ample. Holiday trade is stimulating market. No. 1 Greenings \$2.75@3; Jonathans, No. 1, \$2.75@3.25; Baldwins \$2.50@3.50; Wageners \$2.25@2.75; Spys \$2@3.75.

Potatoes.—Market is firm at higher prices. Michigan and Minnesota whites are now quoted at 80@85c; Minnesota reds 80@82c. At Chicago the improved quality of offerings brought higher prices. The demand is good. Michigan whites are quoted at 70@75c; others range from 62@75c. At Greenville 60c is being paid to farmers.

WOOL.

Boston.—Wool is meeting with good demand and the price tendency is upward. Should the usual heavy buying in January materialize, substantial advance will be made. Foreign markets are anxious to get control of all the stocks possible and higher values are ruling. A fair volume of fleeces moved the past week—fine washed Ohio delaines at 35½c; three-eighths blood unwashed at 37c.

GRAND RAPIDS.

Hens are beginning to lay and the egg market eased off to 30c at the beginning of the week. Dairy butter is quoted at 23c. The potato market has been showing renewed strength of late, with quotations now around 60c. The bean market continues firm, with white pea at \$3.25 and red kidney fully \$1 higher. Apples do not show much change as yet in prices. Local mills are quoting as follows to farmers: No. 2 red wheat \$1.12; rye 85c; corn 70c; white oats 40c; buckwheat 75c. Hothouse lettuce has advanced to 10c wholesale.

DETROIT EASTERN MARKET.

Apples predominated on the Eastern Market Tuesday morning and sold at 75c@1.50, with a few fancy Spies at \$1.75. Potatoes scarce at 85c@1; cabbage 65@70c; parsnips 85c; pork \$8.25@9 per cwt; eggs 45c per dozen; chickens, live 15c; loose hay \$18@22 per ton.

LIVE STOCK MARKETS.

Buffalo.

December 20, 1915.

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

With 105 cars of cattle here today, the market was active on all grades and the best cattle sold a full strong quarter higher; the medium kind 15@25c higher; canners a full quarter higher; butcher cattle, good quality, quarter higher, and the medium cows sold about steady. The bull trade was good and a quarter higher than last week. Stockers sold strong. Good forward springers are selling at strong prices, and cows with calves are bringing \$5 a head more than last week. Late springers not wanted yet. We do not look for the market to change much until after the holidays. We think we may have steady trade next week, but we cannot stand any heavy runs until after they let up in Chicago.

We had a fair supply of hogs today, about 135 double decks, demand quite good and prices 10@15c higher for all excepting pigs, this class sold but very little better than Saturday. The

bulk of the light mixed and medium sold around \$6.75, with a few loads of fancy at \$6.80@6.85, but sales above \$6.75 were very scarce. Pigs sold around \$6.25@6.35, as to weight and quality; roughs \$5.75@6; stags \$4.50@5. About everything sold at the close, but considering the fact that this is a holiday week, would not look for much if any better prices; in fact it looks like our eastern demand along about Wednesday and Thursday would be very limited, and if we have to depend on our packer outlet prices are liable to be some lower.

With 40 double decks of sheep and lambs on sale here today, market was active and prices 25c higher than the close of last week. All sold and we look for steady to shade lower prices balance of the week.

We quote: Lambs \$10.15@10.25; cull to fair \$7@10; yearlings \$7.50@8.50; bucks \$4@5.25; handy ewes \$6@6.25; heavy ewes \$5.75@6; wethers \$6.75@7; cull sheep \$3.50@4.50; veals good to choice \$10.75@11; common to fair \$8@10.50; heavy \$6@9.

Chicago.

December 20, 1915.

Cattle. Hogs. Sheep. Receipts today..23,000 65,000 16,000 Same day 1914..4,517 57,200 18,682 Last week.....57,210 292,955 96,927 Same wk 1914..70,394 230,606 133,119

Shipments from here last week aggregated 11,822 cattle, 53,983 hogs and 15,880 sheep, comparing with 15,305 cattle, 44,420 hogs and 19,132 sheep for the same time last year. Hogs received last week averaged 191 pounds.

Cattle sold at about steady prices for the most part today, with a fair supply. Hogs opened firm for desirable kinds, others being only steady, later on the packers were bidding as much as 10c lower. Fat lambs and sheep were firm, top for lambs being \$9.60.

Cattle prices early last week advanced but Christmas cattle had a good demand at \$10.50@11.70. The offerings of holiday beefs were on a much smaller scale than a week earlier. The bulk of the steers received sold at \$6.75@10, with sales of inferior steers at \$5@6.45, short-fed steers at \$6.50@7.45, medium grade lots at \$7.50@8.70, good steers at \$8.75@9.70 and choice to extra steers at \$9.75@10.50. Fat yearlings were the favorite sellers, and very few high-priced heavy steers were sold. Butchering cows and heifers had a good outlet at \$4.75@7.25 for the former and \$4.50@9.50 for the latter. Cutters sold at \$4.15@4.70, canners at \$2.75@4.10 and bulls at \$4.10@7. Calves were in good demand, with sales at \$4@10.50, according to weight and quality. Cows and heifers advanced and declined along with steers, as did veal calves. Owners of well-bred cattle that are doing well on corn, should hold them until good and fat, as there is a scarcity of such cattle in feeding districts nearly everywhere. Most lines of steers closed 25@40c higher than a week earlier, with cows and heifers 15@20c higher.

Hogs were marketed in enormous numbers last week, and it was impossible to avoid declines, but the market stood the strain of the liberal supplies much better than might have been expected. It is impossible to predict the future course of the market. Eastern shippers have been much larger purchasers than several weeks ago, taking mainly the choicer offerings. This outside competition was a source of considerable strength. Recent receipts averaged 191 lbs., comparing with only 180 lbs. a few weeks ago, 227 lbs. a year ago and 215 lbs. two years ago. Hogs sold Saturday at \$5.95@6.75, comparing with \$5.85@6.70 a week ago, pigs selling at \$4.50@6, while sales were made of heavy packing hogs at \$6.35@6.65, light bacon hogs at \$5.95@6.40, heavy shipping hogs at \$6.70@6.75 and light shipping hogs at \$6.45@7.55.

Lambs sold last week up to \$9.60 per 100 lbs., the highest prices ever paid in December, and prime yearlings of light weight, prime wethers and prime ewes all sold proportionately higher, with not enough to go around. With such a remarkable state of the market, due wholly to the enormous falling off in mutton production in this country, most owners of well-bred lambs and sheep will realize the great importance of finishing them off in first-class shape. A few prime Christmas lambs arrived and sold at the top prices. At the week's close lambs sold at \$6.25@9.60, yearlings at \$6.85@8.25, wethers at \$6@7, ewes at \$3.50@6.50 and bucks at \$4@5.

Horses were plentier last week, but the demand was improved accordingly, so that prices were mostly steady. Horses for the French army were particularly active. Inferior animals went at \$25@75, with drivers at \$80@200, expressers at \$175@210, wagoners at \$150@200 and drafters at \$215@285.

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DETROIT LIVE STOCK MARKET.

Thursday's Market.
December 23, 1915.
Cattle..

Receipts 1418. The run at the local yards was only about half what it was a week ago and fairly good service was rendered by the local railroads. The yards will be closed on Christmas day. Anything arriving will be cared for, but the scales will not be open and no business will be done. It is expected the same will apply on New Years, but as yet the question has not been definitely settled.

There was no change in the cattle situation, the quality was common as a rule, and the trade, while being fairly active was no higher than last week. A few stocker buyers were on hand and had no trouble finding what they wanted. Milch cows were dull and good ones scarce. The close was as follows: Best heavy steers \$7 @7.25; best handy weight butcher steers \$6.75 @7; mixed steers and heifers \$5.50 @6.50; handy light butchers \$5 @6; light butchers \$4.50 @5.25; best cows \$5 @5.50; butcher cows \$4.25 @4.75; common cows \$3.75 @4; canners \$2.50 @3.65; best heavy bulls \$5.50 @6; bologna bulls \$4.75 @5.25; stock bulls \$4 @4.50; feeders \$5.50 @6.50; stockers \$5 @6; milkers and springers \$4 @7.50.

Bishop, B. & H. sold Charles 4 cows av 905 at \$3.65, 3 do av 807 at \$3.25, 3 av 910 at \$3.50, 4 av 780 at \$3.50, 2 av 850 at \$3.60; to Hammond, S. & Co. 3 stockers av 990 at \$6.50, 11 cows av 1114 at \$4.75, 2 bulls av 1365 at \$5.60; to Breitenbeck 4 butchers av 1070 at \$6, 7 do av 1060 at \$6.75, 4 cows av 1167 at \$4.50, 7 butchers av 900 at \$6, 2 do av 890 at \$5.50; to McDonald 6 feeders av 720 at \$5.50, 10 do av 803 at \$5.40; to Lintel 6 do av 745 at \$5.50, 11 do av 846 at \$5.40; to Bray; cows av 1005 at \$4.50, 6 do av 1000 at \$4; to Bresnahan 2 butchers av 635 at \$5, 2 do av 635 at \$5, 1 cow wgh 1320 at \$5, 1 do wgh 1220 at \$5.25; to Bray 7 cows av 1017 at \$3.80; to Miller 8 stockers av 571 at \$6; to Sullivan P. Co. 2 steers av 925 at \$6, 4 do av 1175 at \$7, 2 cows av 840 at \$5, 6 do av 895 at \$4.25, 1 bull wgh 1530 at \$5.50, 6 cows av 983 at \$4.15, 2 cows av 960 at \$4, 2 steers av 1085 at \$6.75, 3 cows av 1030 at \$4.75; to Parker W. & Co. 27 stockers av 980 at \$6.25.

Roe Com. Co. sold Bray 2 cows av 990 at \$3.75; to Stevenson 2 stockers av 645 at \$6.25, 1 do wgh 700 at \$6.50; to Golden 3 cows av 937 at \$4.50, 7 butchers av 646 at \$5; to Hammond, S. & Co. 1 cow wgh 990 at \$3.75, 1 do wgh 1030 at \$5, 2 do av 835 at \$3.60, 1 do wgh 1150 at \$3.75, 2 do av 1070 at \$4.25; to Miller 3 feeders av 700 at \$6.25; to Bresnahan 3 heifers av 817 at \$5.40; to Golden 2 butchers av 685 at \$4.50; to Parker, W. & Co. 1 cow wgh 1030 at \$5, 2 do av 835 at \$3.60, 3 do av 1053 at \$3.85; to amman, B. Co. 2 do av 885 at \$5.75; to Sullivan P. Co. 2 cows av 1050 at \$4.60, 2 do av 970 at \$4.50; to McCoy 18 steers av 906 at \$6.

Veal Calves.

Receipts 696. The veal calf trade was a trifle stronger than early in the week and just about the same as last week. Best grades brought \$10 @10.50; common and heavy \$7 @9.

Sandel, S. B. & G. sold Hammond, S. & Co. 2 av 115 at \$8, 2 av 160 at \$10, 2 av 130 at \$8.50, 4 av 140 at \$9.25, 3 av 165 at \$10; to Nagle P. Co. 2 av 180 at \$10, 6 av 145 at \$9, 9 av 125 at \$8.50; to Burnstone 4 av 165 at \$10.

Sheep and Lambs.

The run of sheep and lambs was very light and the market about steady; one or two small bunches of lambs brought \$9.60, but the bulk of the best went at \$9.50. Swift & Co. bought three or four loads for their New York houses and the close was steady as follows: Best lambs \$10.50 @9.65; fair lambs \$8.50 @9; light to common \$7 @8; yearlings \$8; fair to good sheep \$5.50 @5.75; culls and common \$4 @4.50.

Sandel, S. B. & G. sold Nagle P. Co. 16 lambs av 70 at \$8.75, 30 do av 80 at \$8.75, 23 sheep av 125 at \$8.75, 5 do av 90 at \$4.60, 88 lambs av 8. at \$9.25, 68 do av 80 at \$9.15, 9 do av 75 at \$9, 4 do av 70 at \$9, 10 sheep av 143 at \$5.85, 4 do av 95 at \$5.50.

Roe Com. Co. sold Nagle P. Co. 26 lambs av 75 at \$8.75, 10 do av 62 at \$8.25, 7 do av 60 at \$8.25, 26 do av 73 at \$8.75.

Reason & S. sold Thompson Bros. 32 lambs av 75 at \$9.25, 21 do av 80 at \$9.50; to Nagle P. Co. 58 do av 75 at \$9, 25 sheep av 105 at \$5.

Hogs.

Receipts 17,077. In the hog division the trade was dull; in fact nothing was sold until late. All markets are lower and the market here was big 10c lower than on Wednesday. Pigs \$5.50; yorkers and heavy \$6 @6.10.

LIVE STOCK NOTES.

Peter Hopley, of Lewis, Iowa, who fattened a shipment of Shorthorn yearling cattle for the Christmas holiday market, stated that corn in his locality is of such inferior feeding quality that it requires one and a half bushels to do the ordinary work of a single bushel.

J. W. Frazier, of Illinois, marketed recently in Chicago two carloads of yearling Christmas holiday cattle that tipped the scales at only 1000 lbs. and found a purchaser at \$11.15 per 100 lbs. They were the third cut out of a bunch of 155 head of well-bred calves which he purchased last November, at which time they averaged 320 lbs. The calves had the best of care all the time, having been fed hay and silage all through the long winter period up to the first of April and thereafter in dry lot shelled corn, oil meal and alfalfa hay. Mr. Frazier, who accompanied his fine shipment to market, remarked that it pays well to start with just the right kind of calves of high grade and to finish them exactly right.

Never in past years has there been a more wide-spread rush of pigs and underweight hogs to market than has taken place for several weeks, with especially liberal receipts in the Chicago stock yards, and, of course, prices have experienced many slumps. Yard speculators and eastern shippers of the better class of barrows, both of heavy and light weights, were the strongest supporters of the market as a general rule, although there were a number of instances where the big packing firms aided in bringing about rallies in the market, their course being dictated in all probability by a desire to take steps to check the mad rush of farmers to cut loose on their underweights and mere pigs, for a continuance of such a procedure will inevitably cut severely into the future supply of matured hogs. The spring pig crop was an unusually large one, and there has been very little hog cholera this year in most parts of the corn belt.

Never in past years have prime fat lambs sold on the Chicago market in December as high as they did in 1915, it being simply a case of supply and demand, with meager offerings and a good inquiry from the packers and smaller butchers. There is a scarcity of everything in the live mutton line, including not only lambs, but also yearlings, wethers and ewes, and all choice offerings have sold extraordinarily high. The future prospects of the market could hardly be any better, and further advances are among the probabilities. Many farmers who had intended to fatten flocks of lambs this winter were disappointed in obtaining any, and a great many intending breeders failed to accomplish their desire, as only a few owners of high-grade breeders cared to dispose of any, and the few choice rams and ewes of this class sold so high as to discourage most buyers.

A year ago hundreds of cattlemen who purchased feeders in Missouri river markets at a cost of approximately \$8 per 100 lbs. laid down failed to make it pay, as when the cattle were returned as fat beefers to the market they did not pay expenses. This lesson was so severe that it is no wonder that many of them stayed out of the feeder market this year. In short, many of the former buyers declined to buy feeders of the kind bought last year at \$8 for \$7 this year, while lots of good feeders averaging around 300 lbs. went a begging at around \$7.50. At the same time a good many feeder cattle were shipped from Kansas City and Omaha into feeding districts, and more feeding is being carried on in various states this winter than was promised not many weeks ago. But for all that, great numbers of thin cattle on the feeder and stocker order have been sold to killers at extremely low prices. Recently many Christmas beefs have been marketed in Chicago and elsewhere, these selling at high prices, as they always do, but otherwise the market has nothing to boast about. There will be a superabundance of ordinary cattle for a good many weeks, but prime beef cattle will be scarce and high in price in all likelihood.

H. D. Brent, of Smithshire, Ill., marketed three carloads of Angus yearling steers of his own feeding in Chicago recently at \$10 to \$10.40 per 100 lbs. They were purchased as calves in Omaha early last November at a cost on that market of \$8.85, and were kept on corn and oats up to the first of May, since when they have been on grass and a full corn feed. Mr. Brent is now putting on full feed another string of 110 calves.



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The two great Holstein sires at the head of the herd. Maplecrest Korndyke Hengerveld's dam and grand dam each made more than 1200-lbs. of butter in a year, and including the great grand dam each made more than 30-lbs. of butter in 7 days. His sire has sired three daughters that averaged over 1200-lbs. of butter in a year.

Funderne Pontiac Johanna Korndyke is the son of the world's champion cow, Funderne Pride Johanna Rue, who gave 28,403-lbs. of milk and made 1470-lbs. of butter in a year. He was sired by a brother to the 40-lb. 4 yr. old Mable Segis Korndyke. The dam of the sire is a 30-lb. daughter of Pieterje Hengerveld Count DeKol. This is believed by many to be one of the most productive combinations in Holstein breeding.

I take pride in tendering the services of these animals to the breeders of Michigan who are interested in yearly production. Many people feel it is the yearly work that makes the greatest profit and our effort is along the lines of yearly records. These two herd sires represent the highest culmination ever yet produced for yearly production.

A few high class heifers in calf to Maplecrest Korndyke Hengerveld, and a few bull calves from dams with records as high as 30-lbs. butter in 7 days, for sale.

D. D. AITKEN, . . . FLINT, MICHIGAN.

Duroc Jersey Boars and Sows

The Record of this Herd at Detroit Proves Conclusively that Our Durocs Have the Individuality and Blood Lines that Insure Good Results.

Choice Spring Pigs and Mature Stock. A large herd gives ample opportunity for selection. Send for our new circular and state your wants. Write, or better come.

Swine Dept., Brookwater Farm, Ann Arbor, Mich.



Purebred Registered
**HOLSTEIN
CATTLE**

Supintendent Smith of the Geneva Experiment Station says the average production of butterfat per cow in New York State is about 100 pounds per year. The State College in Ithaca has a cow descended from common stock on one side and from a line of purebred Holstein sires on the other. This cow has produced 479 pounds of fat in a year. This is interesting as proof that intelligent improvement of grade herds by use of Holstein bulls can multiply the butter yield by four and five. Investigate the big "Black-and-Whites."

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Choice Holstein Bull Calves

Ready for service, World's Champion Parentage
HILLCREST FARM - Kalamazoo, Mich.

I Have Holstein Bulls, Bull Calves and Cows that I offer for sale. I can show breeding records, individuality and attractive prices. L. E. CONNELL, Fayette, Ohio.

Espanore Farm,
LANSING, MICHIGAN.

Offers for sale five Holstein Bull Calves sired by the great Bull Pledge Spofford Calamity Paul and out of good A. R. O. cows. This sire has more daughters with records of over 30 lbs. than any bull in the state. If you are looking for this kind of breeding, write for prices and pedigrees.

CHAS. S. OSBORN, Owners.

Top Notch Holsteins!

Before buying your bull look ahead and think of the fine herd you hope to own in a few years. Fifty per cent, or over, of its value depends on your bull. Therefore, get a good bull. And don't be too particular about the price if you can be sure of the quality. M. P. Farms Co. sells bulls of strictly high quality. Write them for a good bull or come and see their "Top Notch" bulls for yourself. McPherson Farms Co., Howell, Mich.

Registered Holstein Bull Sire

—Is son of former state champion cow, 32.94 pounds of butter in 7 days; two months old, mostly white; a beauty in every particular. \$50 brings him right to your station, safe arrival guaranteed. Write for pedigree and photo. Hobart W. Fay, Mason, Mich.

HOLSTEIN-FRIESIAN bargains. High grade heifers \$25 to \$75 each. Reg. heifers \$100 to \$150 each. Reg. Bulls \$40 to \$75 each. B. B. Bayvey, Akron, Mich.

HATCH HERD
YPSILANTI, MICHIGAN

Registered Holstein-Friesian sires, grandson's of World's greatest dairy sire, out of choice A. R. O. dams and King Pontiac Jewel Korndyke; Brother of K. P. Pontiac Lass 41.5; average record of 50 dams in his pedigree 31.25 in 7 days; average per cent of fat three nearest dams 4.37; of his own dam 4.93. Sires in first three generations already have over 600 A. R. O. daughters. A few females bred to "King". Prices reasonable.

FOR SALE

Registered Holstein bulls ready for service; and registered Holstein bull calves, the best breeding in the world, grandsons of Grace Fayne 2nd's Homestead, Pontiac Korndyke, King Fayne Segis and Hengerveld DeKol. The dams of these bulls and calves, have large advanced registry records. For prices, write Callam Stock Farm, 204 Bearinger Bldg., Saginaw, Mich.

We will take your note for one year at 5%—then why not buy a

HOLSTEIN BULL

at once, and get pick of 12 from best Breeding in Michigan. Send for prices and pedigrees. LONG BEACH FARM, AUGUSTA, MICH.

FOR SALE Registered Holstein Bulls

ready for service, and bull calves, also females. FREEMAN J. FISHBECK, Howell, Michigan.

Reg. Holstein Friesian Bull Calves

From heavy producing dams. Bargain prices. DEWEY C. PIERSON, Hadley, Michigan.

Purebred Holsteins Young bulls of best individuality and breeding at reasonable prices. Write us. G. L. SPILLANE & SON, R. D. 7, Flint, Mich.

Choice Holstein Bulls

All from A. R. O. Dams. Semi-off. yearly records 720 lbs. butter in Jr. 4 yr. old class to over 1000 lbs. in mature class. Breeding: Cross "King of the Pontiacs" and the "Domestic blood." Cherry Creek Stock Farm, Hilliards, Mich. M. E. Parmelee, Proprietor.

Holstein-Friesian

Bull calves at reasonable prices. Pontiac Korndyke, Hengerveld DeKol breeding. John A. Rinke, Warren, Mich.

Registered Holstein BULL CALVES 2 to 8 mo. old

from heavy producing dams at reasonable prices. Fred J. Lange, Sebawing, Mich.

12 Registered Holstein heifers, 3 to 15 mos., \$125 each, delivered. 4 are bred. Also bull calves, too cheap to mention price. Ernest A. Black, R. 3, Howard City, Mich.

\$75.00

Buy a pure bred Holstein bull calf 11 mos. old, a son of Colantha Johanna Creamelle Lad. One of the good producing sires. GEO. D. CLARKE, Vassar, Mich.

CLUNY STOCK FARM

100 Registered Holsteins 100

When you purchase a Registered Holstein Sire to head your herd, you want one that will add to the milk and butter productivity of the coming generations. By purchasing from a large herd, you get the benefit of selection, and the test work we are doing. If in need of a Sire ready for service, I am sure we can please you. Correspondence solicited.

R. B. McPherson, Howell, Mich.

MAPLE Lane R. of M. Jersey Herd, Tuberculin tested by the U. S. Government. For sale R. of M. cows, bull calves and heifer calves from R. of M. dams and grand dams and Hood Farm Sire. IRVIN FOX, Allegan, Michigan.

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



You may be prejudiced against the Jersey because you don't know her. Look her up. She's the Money Cow.

Get This Book—a history of the breed and full of very interesting tests and facts. It proves conclusively that for pure dairy type, economy of production, richness of milk, long life and adaptability to feeds and climates—all these combined—she stands way above them all. This book "About Jersey Cattle" is free. Get your copy now. You'll find it mighty good reading.

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THE WILDWOOD Jersey Herd. Registered Jersey Cattle of Quality. Herd headed by Majesty's Wonder 90717, one of the best sons of Royal Majesty. The daughters of Majesty's Wonder are mated to a son of Majesty's Oxford King. Herd tuberculin tested. We have for sale a few choice young bulls for full service from high producing cows. Alvin Balden, Capac, Mich.

Jerseys. Bulls ready for service, extra quality sired by Jacoba's Fairy Emanon, No. 107111, from high producing dams. SMITH & PARKER, Howell, Mich.

Jersey Bulls for Sale

from high-producing dams, with testing Assoc. records, also on semi-official test. O. B. Wehner, R. 6, Allegan, Mich.

Jerseys For Sale

Young Cow just Fresh.

Waterman & Waterman, Ann Arbor, Mich.

\$100 Buys Jersey Bull. Calved March 5, 1913. Sired by Prince of Oxfordale, his Grand sire Marston's Interested Prince, Sire of ten cows in R. of M. and he by Interested Prince, First Prize Yearling bull at Pan American Exposition 1901, sire of 32 cows in R. of M. R. B. FOWLER, Hartford, Mich.

MILKING SHORTHORNS.

Bull 10 months old \$125.00. 7 months \$100.00. 2 cows. DAVIDSON & HALL, Tecumseh, Michigan.

Shorthorn Cattle of both Sex for Sale

W. W. KNAPP, Howell, Michigan.

Shorthorns For Sale

8 young bulls also females, farm 1/2 mile east of Davis crossing on A. A. R. R. W. B. McQUILLAN, Howell, Mich.

Shorthorns

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

BIDWELL SHORTHORNS

For "Beef and Milk?"

Registered Bulls, Cows and heifers, Scotch-topped roans, and reds for sale. Farm at N. Y. Central Depot, also D. T. & L. R. Y. BIDWELL STOCK FARM Box B, Tecumseh, Mich.

Shorthorn and Pol'd Durhams for sale. Have white. C. CARLSON, Le Roy, Michigan.

For Sale—18 Short Horn Bulls by Maxwellton Monarch 2nd, a son of Avondale, from 2 to 13 mos. old. John Schmidt, Reed City, R. No. 5, Michigan.

For Sale—3 Bull Calves Sired by a 30 lb. Bull. 1 from a 28.58 lb. dam. Also 2 heifers 8 and 15 months old. Wm. Griffin, R. No. 5, Howell, Mich.

HOGS.

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

Durocs & Victorias

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

I have started thousands of breeders on the road to success. I have a very large and fine herd. Every one an early developer, ready for market at six months old. I want to place one hog in each community to advertise my herd. Write today.

G. S. BENJAMIN Portland, Michigan.

BERKSHIRES

Two Spring Boars left. A choice lot of fall gilts for sale. A. A. Pattullo, R. No. 4, Deckerville, Mich.

Berkshires—sons, daughters, grandsons, granddaughters of such noted boars as Rival's Champion, Baron Duke 170th, Symbelee's Star 2nd, Grand Champion breeding at farmers' prices. T. V. Hicks, R. 1, Battle Creek, Mich.

Royalton Bred Berkshires—Fine October pigs both Emperor, registered with papers at fair prices. Write to D. F. Valentine, Supt., Temperance, Michigan.

SWIGARTDALE BERKSHIRES

Are the kind that win at the fairs and also produce the litters as all of our show stock are regular breeders. They have the size with the bone to carry them and their breeding is unsurpassed. All the leading families are represented. We have a few choice Spring Boars now crowding the 300 lb. mark, for sale, prices from \$20 up. We are now booking orders for Fall pigs for January delivery. Can furnish choice Trios not akin, for \$45 to \$50. We Guarantee Satisfaction.

Swigartdale Farm, Petersburg, Mich.

Berkshires

of best breeding. Special price on two Spring Boars. D. W. SMITH, Wixom, Michigan.

Berkshires at cut prices. Choice spring boars. Open or bred gilts. Sow farrow in December. Fall pigs, noakin. Chase's Stock Farm, Marlette, Mich. R. 1.

Modern Berkshires. I have for sale young Boars and sows of May farrowing. Also a few sows about ten mos. old of approved types, and aristocratic breeding that I will sell at prices below market values. Correspondence solicited. M. I. Ogilvie, 3 Oaks, Mich.

Berkshires. Of various ages, either sex, open or bred. Elmhurst Stock Farm, Almont, Michigan.

DUROC JERSEYS

A few choice spring BOARS ready to ship. Carey U. Edmonds, Hastings, Mich.

Capitol Herd Duroc Jersey Swine. Established 1888. Spring pigs for sale, satisfaction guaranteed. Express prepaid. J. H. Banghart, East Lansing, Mich.

Duroc Jerseys—Big Type, Heavy Boned Boars ready for service, real head headers Sired by Volunteer Grand Champion. F. J. Drott, R. 1, Monroe, Mich.

DUROC JERSEY BOARS Fall pigs, pairs and trios not akin. W. C. TAYLOR, Milan, Michigan.

Duroc Jerseys—Fall and spring pigs either sex, from choice strains. S. O. STARR, LANSING, CHERRY LAWN FARM, Shepherd, Michigan.

J. W. KEENEY, Erie, Mich. Breeder of Duroc Swine D. M. & T. local from Monroe or Toledo, Keeney Stop.

DUROC Jersey, Mar. & Sept. pigs either sex sired by a son of Volunteer. And two Holstein bull calves and 2 Holstein cows. E. H. Morris, Monroe, Mich.

Big Heavy Boned Duroc Jerseys for sale of all ages. Write your wants. M. A. BRAY, Okemos, Ingham Co., Michigan.

DUROC JERSEYS—A few choice sows bred or open. Also two extra good spring boars. Wm. W. Kennedy, R. 3, Grass Lake, Mich.

Duroc Jerseys—Choice spring boars and sows of best breeding also 5 high grade Holstein heifers due in Dec. Priced to sell. E. R. Cornell, Howell, Mich.

Duroc Jersey Boars of the growthy, heavy boned type, also a few gilts. Inspection invited. E. D. HEYDENBERG, Wayland, Mich.

DUROCS of the best of breeding. April farrow. Either sex. The gilts will be bred for Apr. farrow. Price \$20.00 to \$25.00 while they last. H. G. Keesler, R. No. 5, Cassopolis, Mich.

FOR SALE. Registered Duroc Brood Sows and

August Pigs. E. J. ALDRICH, R. 1, TEKONSHA, Calhoun Co., Michigan.

CHESTER WHITES.—The long type, prolific kind, Meadow View Stock Farm, R. 5, Holland, Michigan.

Registered Chester White males and females. Reg. Holstein male calves, herd bull and cows. Farham's Pedigree Stock Farm, Bronson, Mich.

HAMPSHIRE SWINE. A few choice March and April boars. Also two good yearling boars. Yearling and Spring Gilts sold open or booked to be bred for March or April farrows. Fall pigs single, pairs or trios not akin. Price to sell. Write me your wants. Floyd Myers, R. 9, Decatur, Ind.

HAMPSHIRE HOGS—the belted beauties. One yearling boar and spring pigs, either sex. Write your wants. John W. Snyder, St. Johns, Mich., R. No. 4.

HAMPSHIRE SWINE. The kind that makes such big gains on pasture. Have a few choice fall pigs for sale, also one July boar. I have a very choice herd of breeding sows of the best blood lines, headed by a mammoth son of the Great Look Out. Am booking orders now for spring pigs, can furnish pairs and trios not akin. Geo. E. Starr, Grass Lake, Mich.

Breeders' Directory—Continued on page 597.

Veterinary.

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

Pig Has Rheumatism.—One of my pigs went lame a short time ago; most of soreness is in hind legs, and I have thought his hind quarters were sweeneyed some. I am inclined to believe he has been too well fed. S. W. C., Yale, Mich.—Apply equal parts of turpentine, aqua ammonia and raw linseed oil to back and hind quarters daily. Give him five drops tincture nux vomica at a dose three times a day. Feed less corn, more oats, oil meal and tankage. Keep him clean, dry and warm.

Mare Thin and Nervous.—I have an eight-year-old driving mare that is very high-lived and it is impossible to keep flesh on her. When first taken out of stable she appears to be sore in fore quarters, but after traveling a short distance the soreness leaves her, but if allowed to stand a half hour she becomes sore. When legs are pressed above ankle joints, she flinches. G. J. B., Gladwin, Mich.—Apply equal parts of tincture iodine and camphorated oil to tender spots about fetlocks every day or two. Give 1 dr. potassium iodide at a dose twice a day. An animal of this kind if driven usually remains thin.

Mare Perspires in Stable.—I have a mare five years old that is apparently well, but thin. When in stable it is not unusual to find perspiration on flanks which has some odor. H. W., Perrinton, Mich.—She should be clipped, or else admit more fresh air into stable, and clothe her.

Blotches on Body.—I have a 12-year-old mare that is troubled with little blotches or boils on different parts of body which causes her a lot of trouble. Whatever this ailment is, it causes considerable itchiness and she is very fond of being brushed. I first noticed this ailment two years ago. S. H. H., Stockbridge, Mich.—Give her ½ oz. of Donovan's solution at a dose in feed three times a day. Groom her well and apply a two per cent solution of coal tar disinfectant to itchy parts of body once a day.

Bone Spavin.—I have a four-year-old mare that had bone spavin on each hind leg; called a Vet. from Detroit who fired her but she has not recovered and is yet lame in one leg. M. L. A., Plymouth, Mich.—Have her fired again.

Thick Urine.—I have a 12-year-old mare that had her first colt August 1; both mare and colt have done well since, but the mare's water is thick and milk-like, but so far as I can tell she is well. A. E. D., Decatur, Mich.—Give her 1 oz. of cooking soda at a dose in feed two or three times a day, and a small quantity of salt daily. Also be sure that her water supply is of good quality.

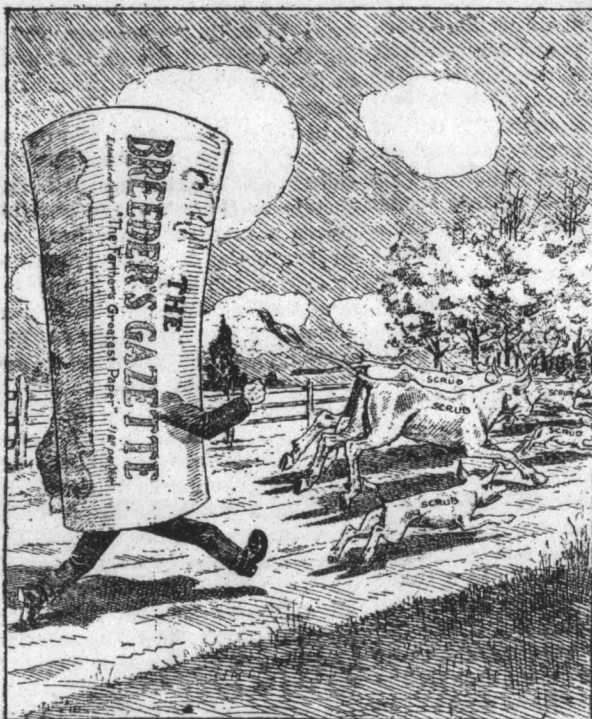
Garget.—I have a cow eight years old that freshened ten days ago, giving milk from only three quarters of udder. I am told she has garget affecting one quarter. E. S., Owosso, Mich.—Rub blocked quarter with one part iodine and 15 parts fresh lard once or twice a day.

Infected Udder.—I have a cow that came fresh last April which is occasionally giving stringy milk from one quarter of udder during the whole summer and fall. Mrs. R. H. W., Atlanta, Mich.—Apply one part fluid extract of belladonna and seven parts olive oil with gentle hand rubbing twice a day. She should be milked clean and milk from this quarter not used. Give ½ oz. hyposulphite of soda once a day.

Indigestion.—I have a calf that is 10 months old which is bloated most all the time. It is fed hay, oats and potatoes. R. J. K., Conklin, Mich.—Give calf ½ oz. hyposulphite of soda three times a day until bloat is relieved, then reduce dose. It is perhaps needless for me to say that a change of feed is often necessary; besides, the calf should be exercised two or three times a day.

Ptomaine Poisoning.—Would like to have you tell me what ails my cat; the first symptoms are dullness followed by straining and vomiting of a greenish colored water with some froth. These symptoms continue and the cat usually dies after 48 hours' illness. Today one was taken sick and in the water there were two worms about four inches in length. In June, 1914, my cats all died, then last July an old cat and kittens, then this fall I lost two more. They appear to all show the same symptoms and are seldom sick for more than a day or two. R. M. U., Chestonia, Mich.—Your cats become infected by eating infected food and doubtless die the result of ptomaine poisoning.

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The scrub must go!

Everybody subscribes to that.

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Cook Your Cull Beans and Small Potatoes.

Change your unmarketable products into profit-producing feed with one of our "FARMER'S FAVORITE" FEED COOKER and BOILER. Saves enough food to pay for itself every few weeks. Many uses every day, every season, indoors and out. Saves 4-5 any fuel. No trick foundation. 30 days free trial. Satisfaction guaranteed. Interesting, convincing circulars free. Lewis Mfg. Co., 64-78 Oswego St., Cortland, N. Y.



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CATTLE

FOR SALE—10 High Bred Holstein Heifers 1-yr. old. 1 fine grade Holstein Bull (3mo. old) ¾ white. 1 Reg. O. I. C. Boar 9mo. old. 1 Reg. O. I. C. Sow 9mo. old. 20 Pure Bred Rock Cockerels. Ralph C. Woodard, R. No. 2, Elsie, Mich.

For Sale—A good registered Shorthorn Bull calf 9 months old, weight 750 lbs. C. V. Tracy, Ithaca, Michigan.

HOGS



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

O. I. C. Serviceable boars, choice gilts not bred, Spring pigs not akin, also Toulouse Geese. Write for low prices and photo. Alvin V. Hatt, Grass Lake, Mich.

O. I. C.'s—yearling sows, gilts, fall pigs. Very reasonable. Satisfaction guaranteed. A. R. GRAHAM, Flint, Michigan.

REGISTERED O. I. C. BOARS & GILTS High class fall pigs at reasonable prices. J. CALL JEWETT, Mason, Mich.

O. I. C. SPRING BOARS of good type and Red Polled bull calves. John Berner and Son, Grand Ledge, Mich.

O. I. C.'s STRICTLY BIG TYPE. March, April and May pigs sired by Lengthy Prince, White Monarch and Frost's Choice—all big type boars and sows weighing from 500 to 700 lbs. with quality second to none. Can furnish in pairs not akin. Prices reasonable. Newman's Stock Farm, Mariette, Mich. R. I.

O. I. C. Sows bred for March and April farrow. Priced to sell. From best of stock. E. B. MILETT, Fowlerville, Michigan.

O. I. C. Choice 18mos. old boar. Grand Champ. at West Mich. State Fair 1915 also Mar. and Apr. gilts. A. J. BARKER, BELMONT, MICH. R. No. 16.

O. I. C.'S 3 July boars. Bred gilts with size and quality. \$22 to \$30 each. C. J. THOMPSON, Rockford, Michigan.

Way Brothers Stock Farm. The home of the big for sale. Registered free. J. R. Way, Three Rivers, Mich.

O. I. C. serviceable boars, tried sows, gilts bred for March and April farrow, summer and fall pigs. I pay express. G. P. ANDREWS, Dansville, Mich.

O. I. C. Gilts bred for March, April and May farrow. Recorded in buyer's name. H. W. MANN, Dansville, Michigan.

O. I. C. and CHESTER WHITE SWINE

Big type with quality. We have the undefeated breeders your herd at seven state fairs this year. They were sired by Abo 2nd, one of our many good herd boars. Special prices on all boars for the next 30 days. Get a gilt bred to the Great Schoolmaster, the highest priced boar of the breed, Champion over champions. Write for our big catalogues with history of the best herd in the whole country. Come and see them. Rolling View Stock Farms, Cass City, Mich.

O. I. C. Choice Spring boars and bred gilts. Glenwood Stock Farm, Zeeland, Michigan.

O. I. C.'s. Spring Boars and gilt bred sows. Write JULIAN P. CLAXTON, Flint, Michigan, R. 8.

Registered O. I. C.'s. Attractive prices on fall pigs for males and \$15 for females. They are standard. Wgt. large litters. Elmer E. Smith, Redford, Mich.

THOROUGHbred pedigreed O. I. C. shoats \$12 for males and \$15 for females. They are standard. Wgt. 80 lbs. F. W. Mackinder, Harrisville, Mich.

POLAND-CHINAS

From our thousand pound Grand Champion Boar and Big Stretchy Sows, of best breeding. Spring Boars at a bargain.

Hillcrest Farm, Kalamazoo, Mich.

BIG TYPE P. C. Either sex, pairs or trios not akin. Bred sows and gilts. Have several 1000 lb. boar prospects. Absolutely no larger breeding. Everything guaranteed right. FRANK KRUGER, Ravenna, Mich.

POLAND CHINA gilts bred for March and April farrow. Fall pigs, satisfaction guaranteed. G. W. HOLTON, Kalamazoo, Michigan.

POLAND CHINAS of the big type. Boars ready for service. Bred Rock Cockerels. A. A. WOOD & SON, Saline, Michigan.

Large Strain P. C. Boars. Bred gilts are all sold Spring pigs that are beautiful, sired by Big Defender, the boar that everybody goes wild over. Come and see him. H. O. SWARTZ, Schoolcraft, Mich.

Large Type P. C. Largest in Mich. Boar pigs ready for service good enough to go anywhere. First order gets first choice. Priced to sell. Sired by two largest boars in State. Free Livery to visitors. W. E. LIVINGSTON, Parma, Mich.

LARGE TYPE P. C. Some very choice April and May farrow. W. J. HAGELSHAW, Augusta, Mich.

Heavy BONED POLAND CHINA Spring Boars and gilts not akin. Also older stock. Prices right. CLYDE FISHER, St. Louis, Mich.

Spring Pigs at Half Price:—Bred from the largest strain of Poland Chinas on earth, none bigger. If you ever expect to own a registered Poland China, this is your opportunity. Get busy and order at once. Pairs and trios not akin. \$15 each. A few bred sows at \$25. J. C. BUTLER, Portland, Mich. Bell Phone.

Big Type Poland China—Western bred extra large boned. Stock for sale. Pairs not akin. Satisfaction guaranteed. W. BREWBAKER & SONS, Elsie, Mich. R. No. 5.

Big Type Boars all sold. Have several good gilts bred to Smooth Jumbo Jr. Top Boar of J. D. Collin Sale. Priced right to go quick. A. D. Gregory, Ionia, Mich.

Big Type Poland China Gilts, bred to a good son of Wonderful Wonder. He sold in Iowa for \$625. This will please you. Robert Martin, R. 7, Hastings, Mich.

Poland Chinas. Spring Pigs either sex, both medium and big type from large litters. Prices right. L. W. Barnes & Son, Bryon, Michigan.

25 BIG TYPE POLAND CHINA boars sired by Big Smooth Jumbo 810 lbs. at 20 mos. and Giant Des Moines 743 lbs. at 17 mos. At farmers' prices. Sent C. O. D. Write or come and see 130 head of good big types. Wm. Waffle, Coldwater, Michigan.

For Sale Poland Chinas either sex, all ages. Something good at a low price. P. D. Long, R. F. D. No. 8, Grand Rapids, Mich.

Heavy Boned Poland Chinas. Both sex and all ages at bargain prices. Also, B. F. Rock Cockerels. ROBERT NEVE, Pierson, Michigan.

A. G. Meade, Stanton, Mich. Colby's Ranch, has for sale 100 head of Registered Poland China Boars and Sows. Prices reasonable.

Yorkshire Service Boars—Also sows and fall pigs, pairs not akin. No Cholera. Send for Photos. CHAS. METZ, Ewart, Mich.

Large Yorkshires Gilts bred for spring farrow. Service Boars. Pigs all ages. Prices Reasonable. W. C. COOK, Route No. 1, ADA, MICHIGAN.

Mulefoot Hogs—Fall Pigs. Brood Sows and Gilts. Young service Boars. Pairs not akin. Write for prices. C. F. Bacon, R. 3 Britton, Mich.

SHEEP.

Oxford Down Sheep. Good Yearling Field Rams and ewes of all ages for sale. M. F. GANSSLEY, Lennon, Michigan.

Oxford Down Sheep and Polled Durham Cattle For Sale. J. A. DeGarmo, R. No. 25, Muir, Mich.

Registered Oxford Down Sheep. Ram Lambs. Yearling Ewes. L. N. OLMSTED, J. SPAANS, Muir, Mich.

OXFORDS—no more for sale. O. M. YORK, MILLINGTON, MICHIGAN.

Start the Boy Shropshire and Oxford ewes bred to imported rams. KOPE KON FARM, Kinderhook, Michigan.

Merinos and Delaines. Rams, few choice young ewes, Ram and Ewe lambs. Write S. H. SANDERS, ASHTABULA, OHIO.

Shropshire Ewes For Sale DAN BOOHER, R. 4, Ewart, Michigan.

FOR SALE—70 head coarse wool breeding ewes. Write H. C. WEEKS, Allegan, Michigan.

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Practical Science.

CEREAL FOOD PRODUCTS.

BY FLOYD W. ROBISON.

(Continued from last week).

Oatmeal the Great Breakfast Food.

From an almost remote period oatmeal has been used as a breakfast porridge and is probably, by the majority of people, considered to be at the present time the most ideal breakfast food. It has found use in a variety of other ways in the form of pastry and subsidiary articles of diet. In our country wheat and its milled products, particularly the finer grades of flour, find very extensive use in the form of bread. Continental countries use rye to a considerably greater extent than is done in this country. Rye is not, however, considered as palatable and attractive as is bread made from wheat. Corn is used principally in pastry food materials, puddings, cakes, etc., and as a thickener and filler for gravies, while the use of rice, aside from a limited use as a breakfast food, is confined almost entirely to puddings and certain like articles. Wheat has been used as a breakfast food but it has never reached the enormous demand in this way which has been allotted to oats.

The Origin of Prepared Breakfast Foods.

Probably the greatest impetus to the use of cereal products in the diet has come through the introduction some years ago of the so-called breakfast foods. It is quite customary and usual to consider this impetus to have been given by the Postum Cereal Company. While this company has been very prominent, perhaps the most prominent exploiter of the breakfast food idea, we do not understand that it was the originator of the idea. As far as the preliminary preparation of the food is concerned, by the manufacturer, the idea probably originated in the Battle Creek Sanitarium, which institution for a long time preceding the introduction of postum products or any other cereal foods, had been using on their tables certain products, such as prepared oat and wheat foods as well as cereal substitutes for coffee and tea. But certainly the general public have been made acquainted with cereal foods more particularly through the remarkable and astounding advertising campaigns which have been carried on by the large breakfast food manufacturers. Just how much foundation there is in the fact warranting the use of this class of articles of food from a physiological

standpoint, is difficult to decide. There was a time a few years ago when it seemed that the old regular class of breakfast food products, such as oatmeal, would be completely driven from the market, such was the demand for such a convenient class of food as the prepared breakfast foods. This has been succeeded at the present time by a perhaps more sensible use of these materials, which has resulted likewise in the establishing of the cereal breakfast food business upon a more substantial and more economical foundation.

The Label Speaks More Truth Today.

These products are valuable additions to the diet and since the passage of the Food and Drugs Act which has made it desirable, in fact necessary, for the appearance of more truthful statements upon the labels of these package foods, there has been a saner demand for them, and it is safe to assert that these institutions which are now manufacturing successfully these products and finding a market at the present time for them are engaged in a business which will call for the substantial support of consumers.

The Demand for White Flour.

Probably the cereal food product which is in greatest demand among our people is wheat. Bread, the direct product of the flour from wheat, is used practically three times a day in one form or another. There has been a great effort among flour manufacturers in this country to produce each year a higher grade flour. By higher grade they have usually meant a flour whiter in appearance. American flour is called "White Flour" abroad, and the desire for white flour which has been created no doubt by the public demand for appearance has stimulated manufacturers to each year introduce processes which will result in the production of whiter flour. Insofar as any ordinary milling or separating process can be invoked, to accomplish this end, we see nothing wrong in the process. We know that the finer the sieves the flour is put through the whiter it becomes, due to the separation of the fine particles of bran. In addition to this the locality in which wheat is grown and the grade of wheat grown has much to do with the color of the finished product. Certain flours from certain sections have thus had the advantage in color over other flours from other sections, which were just as nutritious and perhaps even more nutritious, but which latter were not as much in demand

because the flour could not be made into such white bread as in the case of the naturally lighter colored flour. This has led to the use of artificial means for whitening the color of the flour until now a great many millers throughout the country employ artificial bleaching processes for changing the color of the dark flours. This in itself perhaps was not of sufficient moment to attract general attention until these processes came to be used to permit the introduction into the whiter and lighter product flours of certain of the lower grades which the sieves would separate out. In other words, it is our understanding that certain of the bleaching processes permit the mixture, we will say, of a commercially lower grade of flour, with one which contains a considerable quantity of flour of the highest patent, thus permitting the whole product to be sold as a high grade flour which, if it were not for the artificial bleaching would be at once detected by color. While the flours were equal in value and while the milling processes had been equally as efficient in one case as in the other, the bleaching of the product for the sake of uniformity could not be found as objectionable, as is the coloring of butter for the sake of uniformity, but while the bleaching is invoked to cover up commercial inferiority in flours then in our judgment the processes become as objectionable as does the coloring of butter when it is used to cover up commercial inferiority.

Is Flour Bleaching a Violation of Law?

We have never been particularly impressed with the argument against bleaching because of health. Certain well-known pure-food advocates have maintained and are able to produce, substantial proof that bleaching is injurious to human beings and likewise to the flour itself. We, however, have never been sufficiently impressed with this argument for, in our opinion, the abuse of bleaching lies particularly in the substitution which it permits of a lower and inferior article for a higher grade article of food. In other words, in our judgment it comes directly in conflict with that section of the Food and Drugs Act which says: "An article is adulterated if by any means it is made to appear better or of greater value than it really is."

Wood ashes should be carefully saved and applied to the spots on the farm where the soil is most in need of potash. The common mistake of mixing them with hen manure should, however, be avoided as this sets up a chemical process, causing the release of nitrogen and a consequent loss in the value of the manure.

Michigan Farmer's Club List.

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

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