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Michigan's Grand Old Man of Science



"This flower throws its seeds a long way. I measured the distance several times".

EACH commencement at the Michigan Agricultural College is now marked by a particular event. That is the arrival of Doctor Beal. Doctor Beal, now eighty-seven years of age, was professor of botany at the College for forty years, retiring in 1910. Not many men have had the delight of seeing so many of their students attain places of note in the educational world.

To enumerate all the professors, deans, research workers, that received their training in botany under Doctor Beal would practically require naming every agricultural college in the United States and Canada, and scores of other universities and colleges. One of his students, alone, has been the author of a score of volumes and has edited two large encyclopedias besides—L. H. Bailey, formerly Dean of the College of Agriculture, Cornell University. The deans of agriculture in the colleges of agriculture in Illinois, Nebraska, Oregon, Missouri, West Virginia, North Dakota, Tennessee, Colorado, are all Beal men. Perhaps there are others. There are editors, such as Collingwood of the Rural New Yorker, Wermuth of the Michigan Farmer, Sevey of the New England Homestead. At least three are college presidents: Kedzie of Michigan, Butterfield of Massachusetts, and McKenny of the Michigan State Normal College. To list all who are or have been, in the U. S. Department of Agriculture, would require a good deal of typesetting.

BUT no one must infer that all the graduates of these years have entered educational work, or other professions. Dozens have gone to the farm. Going through the list of graduates, one finds ever and anon something like this: "Farmer," "Orchardist," "Farming and Stockraising," "Ranchman," "Fruit growing," "Farm manager," "Poultry raising." Many have entered the field of the county agent, and in that position are of tremendous value to the

farming interests of the state. Others have gone into business, medicine, law, and the like.

Doctor Beal was a very live teacher. He could "spot" the drones and the energetic ones as quickly as any professor M. A. C. ever had. He loved to get off a joke that would enliven things and grease the class-room wheels. One day we were studying fungi. My room-mate wanted to know if any of these fungi were poisonous. The Doctor said that two were. Whereupon my doughty partner replied that he had tasted all the specimens and they hadn't hurt him. "Very well," said the Doctor, "I'll make note of the fact that they are not injurious to the lower order of animals." "Did anyone leave this old umbrella here?" the Doctor inquired one day. "Yes, sir, I did," said a student. "That's good, I'm glad to know it, because the fellow who left this one took mine!"

SOME people believe that the teaching profession is not worth while. There is not enough money in it. But when one contemplates a life like that of Doctor Beal, and what it has meant to the state and to hundreds of individuals, there is no argument on the question as to whether a teacher who loves his subject and who loves his pupils is an asset to society. And when one sees the cheering that this aged professor of botany gets when he appears at commencement time, it is enough to make him feel that money is not the sole consideration in choosing a career. And while we speak of the love of one's work, it may be interesting to record one of the Doctor's experiments, the end of which he knew he would never see. Forty years ago, he buried in a certain spot on the campus something like twenty bottles. In each bottle are seeds of certain well known weeds. The idea was to determine how long these seeds will retain their vitality. One bottle was to be exhumed every five years. Already eight bottles have been dug up, and there are enough remaining for half a century to come.

N. A. M.



In the Botanic Garden, Dr. Beal is saying: "In that spot are fourteen varieties of ferns, which I planted".

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DETROIT, JULY 31, 1920

CURRENT COMMENT

Farm Crop Exhibits at Fairs

A VAST amount of good could be accomplished if farmers of the state could work in harmony with their county farm bureaus and officials of the fall fairs in preparing good crop exhibits. The development of the many county farm bureaus throughout the state is sure to stimulate a lively interest in preparing these exhibits of farm crops, and it is to be regretted that the officials of some of our big fairs have substituted state and federal exhibits for farm bureau and club exhibits of far more educational value. On the other hand, some of our fair officials have increased their awards and are making every effort to encourage this phase of their exhibits. It is none too early for those who are in a position to make such exhibits to make preparations.

Now that the work is being put on a more substantial basis and plans have been perfected so that the farmers will be assured of a better market for their seed, a wonderful amount of good can be accomplished by improving these exhibits at our fairs. There is no doubt that the value of such exhibitions has been minimized because of the alleged practices of certain exhibitors, who have carefully gathered samples of grain and vegetable specimens in various parts of the state and country and entered them in competition with local farmers' exhibits of home-grown crops. While some of these exhibits were not without some educational value, they have had a tendency to discourage many local exhibitors. One of the first things the crop improvement departments of the new county and state farm bureaus should do is to correct this evil by insisting upon an entry system that properly classifies the exhibitors. This is a problem that should be given careful consideration by those in charge of crop exhibits at our leading fairs. There is no doubt that these exhibits as they have been conducted in the past are far from satisfactory from the farmer's point of view. Small local exhibitions encouraged by local banks and farmers' organizations have never failed to stimulate good natured rivalry and local interest in farm crop improvement work. Of course, a few cases of ill-feeling have resulted from certain individuals failing to win with their exhibits, but in a general way a vast amount of good, and no harm, has resulted from weeding out a few troublemakers along with some of their exhibits, for every farmer who enters exhibits for the fairs should do so with a broader purpose than merely to outdo a neighbor or win a few dollars of prize money. Putting these exhibits

of farm crops on a county or community basis will increase interest and do away with petty jealousies.

These exhibits not only afford a fine opportunity for the farmers to study the points of special merit in the exhibits, but with a skilled judge they can profit more largely by studying the deficiencies of the specimens that make up the exhibits. It is easy to say good things or win popular applause by discussing the excellencies of our farm crops, but the majority of us could profit more largely by giving special attention and study to some of the outstanding faults of the specimens on exhibition. In the first place the exhibitor should be a close student of the demands of the leading markets for the kind of crops he is preparing for exhibition. Such knowledge will give him an idea of the points which go to make up crop excellence and to prepare his exhibits with such points firmly in mind.

Another matter which should be given careful attention in studying these exhibits is the adaptability of certain varieties of farm crops to the climate of the locality where they are grown. Another fact which they seldom fail to bring out is the fact that the farmers in the community are growing too many types and varieties, especially in the case of corn. Some of these varieties mature early and do not run too much to cob to produce the most grain and have less to fear from frost. All of these matters require close study and observation on the part of individual growers, and the most successful way of inducing farmers to select better seed is to bring together the products of their farms and hold practical demonstrations along with the judging of their exhibits. Such work has a far greater educational value than importing foreign exhibits and neglecting exhibits of interest to the farmers of a state or county.

Marketing the Grain Crop

THE threshing season being now at hand farmers are confronted with a marketing problem which is more difficult of solution than any which has confronted them in recent years. The tight money market, and inadequate transportation facilities will operate to cause a comparatively wide spread between terminal market quotations for spot grains, and prices offered at local shipping points. The same factors will naturally increase the normal tendency of growers to sell on the early market, as a means of providing the funds to finance the farm business. This combination of circumstances, together with an uncertain future foreign demand, is reflected in the slump of prices at terminal markets. Millers will naturally buy only for current needs, and elevator operators will not be anxious to buy grain for speculative purposes under these conditions.

This analysis of the situation seems to indicate either a limited movement of grain during the threshing season or a decline in prices to a level which makes the grain appear a safe investment to the speculative holder. On the other hand, growers will be loath to part with their wheat at prices which are below the guarantee formerly in force, which fact will operate against the forcing of an abnormal decline by grain speculators.

Obviously the future grain market must be in some degree speculative, and to some extent the majority of grain growers must be speculators or losers, as the country's crop cannot all be moved at once. Somebody will have to own and store it until it can be used. Much of it will have to be stored on the farm for future sale. The problem which will confront many farmers is at what price they can afford to sell, and when they can afford to hold.

Marketing Conference

Chicago Meeting Promises Big Returns

WHAT promises to be the most far-reaching conference on marketing farm products ever held in America was called to order on July 23 by J. R. Howard, president of the American Farm Bureau Federation at the Hotel LaSalle, Chicago, Illinois. Over five hundred people were present, responding to the call for representatives of all farmers' cooperative companies interested in marketing grain and live stock, such as State Cooperative Grain Dealers' Associations, Cooperative Live Stock Shipping Associations, Farmers' Unions, Societies of Equity, Farm Bureau Federations and Masters of State Granges, together with representatives of the Department of Agriculture, Agricultural Colleges, State Departments of Agriculture, and the Agricultural Press. Initial plans were laid which it is hoped will lead to taking the next step in marketing farm products by the farmers themselves.

The first day's session, given over largely to hearing statements of the work being done by the organizations already in the field and suggestions for their federation into one unit reached its climax when Aaron Sapiro, attorney for fourteen of the California cooperative marketing organizations was given the floor. Mr. Sapiro, who is considered the best informed man in America on the business organization and legal aspects of cooperative associations, told the gathering of the work of the California raisin, prune, apricot and orange growers, and followed with a daring plan for the marketing of the American wheat crop. Defining his idea of cooperation as the American brand, which is producer's or seller's cooperation rather than consumers' cooperation, which is represented by the Rochdale plan of the English cooperative societies, he stated to the gathering that the fundamental principles underlying the success of the California associations were: That growers were organized to sell by commodities, such as raisins, or groups of commodities, like prunes and apricots, whose marketing problems were identical rather than by communities; that the selling organization was formed without capital stock, thus avoiding legal difficulties and also any tendency for the organization to make money out of the producers; that marketing was a specialist's job, and when the marketing organization was formed experts should be placed in charge of its various departments, such as salesmanship, transportation, statistics, legal and advertising; that to be effective the growers must bind themselves to sell through the organization for a period of years, at least five; that they must give title to their product to the selling organization which is then pooled by class and grade with that of other growers and the pool sold whereupon the grower is paid for his share of the pool, less the cost of selling it; that with title to the product the marketing association can obtain warehouse receipts which form the basis of loans so that the grower receives a prompt advance payment immediately upon delivery, and that a sufficient percentage of the crop must be signed up to the selling organization to control the price before it is worth while to make the start.

His plan for the wheat growers involved (1) the formation of a cooperative marketing association in each of the principal wheat growing states, made up of wheat growers only, which would issue capital stock and own the elevators and necessary drying plants, etc., of the state; that these state organizations should be members of a

national selling organization formed without capital stock; that individual contracts to sell to the cooperative organization for a period of five years should be made with at least fifty per cent of the individual growers in the nine big wheat growing states; that on the board of directors which would establish the price of wheat month by month, would be representatives of the public, the Department of Agriculture, the Federal Trade Commission who, through the power of the press would be able to prevent the establishment of a price higher than was justified. Such a plan can be put into effect under existing laws.

Other speakers at the conference were C. H. Gustafson, of Nebraska, president of the Farmers' Union; B. Drake, of Minnesota, secretary of the Equity Cooperative Exchange; Frank Meyers, secretary of the Farmers' National Grain Dealers' Association, who told of the work their organizations were doing in the solution of local grain marketing problems through the ownership of the country elevator, and the start they had made to have their own brokerage houses upon the leading grain exchanges in order that they might secure fairer treatment and also cut down the margin between the price at country loading points and the terminal market price. Their plans would absorb the profits of brokerage and elevator companies, but does not offer a solution of the problem in which the farmer is most interested, namely, a more stable price and a higher average price in order that there will be fewer times when he is obliged to sell below cost of production. This most important feature was included in the plan discussed by W. G. Eckhardt, director of grain marketing, of the Illinois Agricultural Association, and was covered still more fully by Mr. Sapiro who followed on the program. E. T. Meredith, Secretary of Agriculture, told of the service of his department and its need for more funds, especially to gather statistical and marketing information which farmers want.

A. A. Elmore, secretary of the Washington-Oregon Wheat Growers' Association, stated that organization is already going upon the California plan with fifty million bushels of wheat signed up; the president of the Canadian Council of Agriculture asked for an international conception of the marketing plan, and Clifford Thorne discussed his work to reduce the size of the coming freight rate increase, fifty per cent of which will be borne directly or indirectly by the farmers.

Complete agreement of all the organizations represented as to manner of taking the next great step could hardly be expected. The Farmers' National Grain Dealers' Association manifested a tendency to split off from the rest and "whop its own nigger." How important its differences are cannot now be determined, but it is the belief that there is coming to be enough cohesive power among farmers and farm organizations to bridge over any such gaps in view of their fundamental community of interest.

Although the conference was expected to cover live stock marketing as well as grain, attention was confined almost exclusively to the grain problem. A later conference will be devoted to live stock problems. The conference adopted resolutions as follows:

Resolved, That we recommend that the chairman of this convention appoint a permanent committee not to exceed seventeen members, representing the various organizations interested, and with the consent and approval of such organizations, to consider, (Continued on page 131).

Controlling Leaf Hoppers On Potatoes

By C. W. Waid, Extension Specialist, Michigan Agricultural College

DURING the last two seasons a small insect known as a leaf hopper has been doing a very great amount of damage to the potato crop, particularly in the Upper Peninsula. This insect is similar in appearance to the green aphid which is frequently found working on a variety of crops, including the potato. It differs from the aphid in shape, being considerably longer than the aphid and resembling in some degree a minute grasshopper in form.

During the early stages of its development it is found on the underside of the leaves but later it takes on a winged form and thus equipped will fly into the air when disturbed. Its method of feeding is to suck the plant juices from the potato plants, and in this operation it causes the injury to the plants which has formerly been known as tipburn.

Dr. E. D. Ball, formerly of Wisconsin but now Professor of Entomology at Ames, Iowa, was the first man to discover and pronounce the fact that the leaf hoppers are largely responsible for the trouble called tipburn. Dr. Ball has changed the name of this trouble to hopperburn. According to Dr. Ball, the adult leaf hoppers live over the winter, hiding in brush and rubbish, in woods and fence rows. They do not appear until late in the spring, then they gradually come out and feed on the grass and weeds, rarely touching a potato at that time.

On June 6, 1919, at Ames, the air was swarming with the leaf hopper in their spring flight. After this was over, they settled down on the potato fields in large numbers. They soon began to lay invisible greenish eggs in the stems and veinlets of the leaves. The egg laying continued from one to two months. Their total length of life is over a year. The eggs hatch into nymphs which remain on the under side of the leaves. As the nymphs develop the burning of the leaves on the potatoes began to appear. They shed five skins during the course of their development.

A second flight of the hoppers oc-

curred in midsummer and at the end of this flight they settled down on the late potatoes. At Ames during 1919 the hoppers hatched at the rate of about 2,000 per plant.

It is not as yet positively known just how the hoppers cause the potato leaves to turn brown on the tips and margin. It is sufficient for the practical grower to know that this condition and the leaf hopper are closely associated; that if the leaf hopper is controlled the tipburn will be controlled.

Many growers in the Upper Peninsula know that in 1919 early planted fields of potatoes of such varieties as the Irish Cobbler and Triumph were in many cases almost entirely ruined by the action of the leaf hoppers, and results on the late planted potatoes, while not so severe, were in many cases serious enough to cause heavy loss. This is particularly true of the Green Mountain variety.

Methods of Control.

Parasitic fungus diseases will kill

a great many of the hoppers, especially during weather which is favorable for the development of these diseases. Egg parasite, according to Dr. Ball, took about 40 per cent of the second brood in 1919. We can expect that some seasons the injury from these insects will be much greater than others.

The form of spray material which seems logical to use and which is recommended by some writers is nicotine sulphate, of which Black Leaf 40 is one of the common brands. When this material can be applied so that it strikes the insects, it will kill at least those in the nymph form. The difficulty in the use of this material is to reach these insects, so many of which fly when disturbed. Most growers who have attempted to use nicotine have been disappointed with the results, probably because the method of application was such that comparatively few of them were hit.

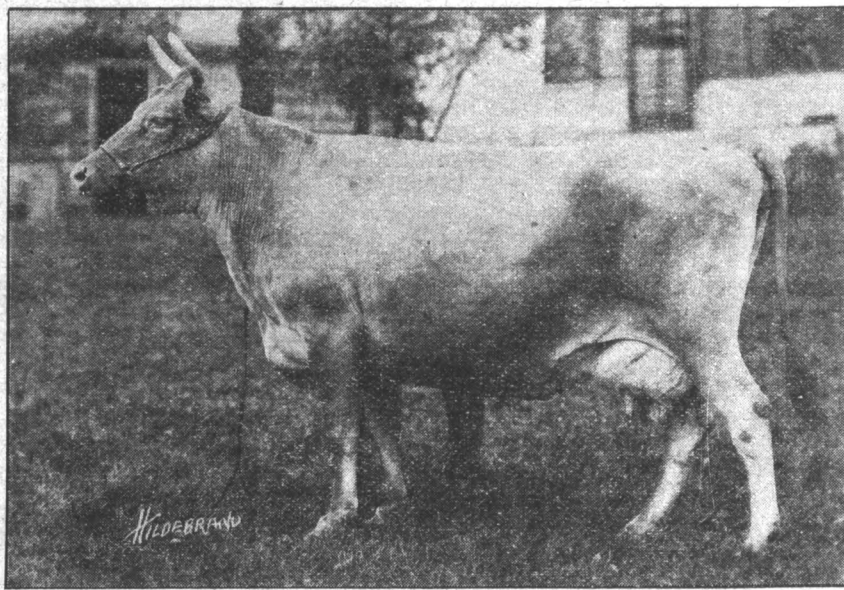
Much better results have been reported from different states where

bordeaux is used frequently throughout the year. Bordeaux is not a sure preventive of the injury caused by leaf hoppers but apparently this material, when properly applied, will greatly reduce the percentage of injury. Professor Parrott of Geneva, New York, found that bordeaux, with an excess of lime was more effective than the normal bordeaux. Experiments are being conducted in several states this season to determine the best material to use to control leaf hopper and the best method of application.

The potato growers who wish to protect their plants in the best known manner will do well to use bordeaux and if nicotine sulphate is added to this and the application made with considerable care so that the undersides of the leaves are well covered, no doubt the results will be better than where the bordeaux alone is used. When it is realized that an added advantage of using bordeaux to protect the plants against a possible late blight attack, it should encourage potato growers to a more common and thorough use of bordeaux. The strength of bordeaux commonly recommended in this state is four pounds of vitrol and four to six pounds of lime to fifty gallons of water. It should be understood that the lime is added primarily to prevent burning with the vitrol. There is no objection to adding lime in considerable quantity so long as there is not enough used to clog the nozzles of the spraying outfit.

Growers should take into consideration the fact that bordeaux can be used in combination with the poison sprays as well as with the nicotine spray. When used in this manner the added cost is simply the cost of material, as the labor would be practically the same as where poison alone is used.

Our advice, therefore, would be for potato growers to use bordeaux very generally this season, not expecting that it will entirely prevent the injury by leaf hopper if they prove to be numerous.



Count's Miss Marigold 250951, with a Record of 14,473 Pounds of Milk, 895 Pounds of Fat at Age of Nine Years and Four Months.

Sheep On The Dairy Farm

IT is generally admitted by experienced flockmasters that the majority of dairy farms present ideal conditions for handling and supporting a small, but select, flock of sheep. The methods of crop growing and caring for the dairy herd furnish proper feed for the flock, and, if properly housed, the feeding can be done at regular periods with practically no loss of time or labor. On many dairy farms a rigid culling of the cows, and a small band of ewes in the place of the low producers, would not only add to the profits from the business, but would aid materially in balancing the labor problem.

There are certain limiting factors in dairying, the same as in sheep raising, which for the most part make it unprofitable to extend either, or both, beyond certain limits. These limits are stable room, labor and grain feeds for the dairy herd; pasture land, parasitic infection, woven wire fencing and waste feeds for the sheep.

Dairy cows require a vast amount of labor and considerable grain feeds. Sheep make good returns with the least amount of labor and have the ability to make profitable use of rough feeds with small quantities of grain. Dairy cows require expensive barns

and sanitary equipment to give a product adapted to the trade. Sheep thrive remarkably well in open sheds, and it is to them that we can turn for the most profitable marketing of the surplus fodders and silage. For the one hundred and fifty-acre dairy farm forty ewes make a good average flock to carry from year to year. A few less cows and more sheep could be made profitable on thousands of our Michigan dairy farms.

The selection of the breed is of small importance compared with the other problems of handling the flock. At the present time the flock that will furnish a few good lambs and yield profitable fleeces of wool will give the most profit. If some particular breed is the most popular in the community, for many reasons it would be advantageous to select ewes of that breed for foundation stock. One might just as well suit his fancy in the matter of breed right at the start because he can do it cheaper then than he can shift over a few years later. When prices are right, or when he can make a good deal in picking up a few uniform, thrifty, well grown ewes, he should not hesitate to make the start. The main object is to get ewes of as uniform a type and size as possible so that better advantages of marketing can be

obtained than when a mixed flock is kept.

The first step toward fitting the farm for sheep raising will be to inclose some of the fields with sheep-tight fences so that the ewes will have abundant range to gather an adequate supply of feed. As soon as practicable fences should be provided so that the ewes and lambs can clean out the fence rows, glean the stubble fields and convert the aftermath of the meadows into profitable wool and mutton. Farms that support sheep are remarkably free from weeds. Sheep not only clean up the fields and fence rows, but, if allowed to range over the pastures grazed by dairy cows, they will clean up the undesirable weeds and grasses in a way that could not be equaled with other kinds of stock. Some of the most foul pastures have been greatly improved by allowing sheep to graze alongside of the cattle at frequent intervals during the grazing season.

The kinds of hay, grain and fodder crops grown on the dairy farm provides an excellent ration for the sheep. A small field of rape for fall grazing will give the ewes and lambs that are to be fitted for market a good start and prepare the breeding ewes for the mating period. As far as possible it is ad-

visable to allow the sheep to harvest their own feeds.

The feeding of a small amount of silage has solved the difficult problem of bringing the pregnant ewes through the winter feeding period without the use of roots. Silos are an essential part of the equipment of all well-managed dairy farms. This is also another reason why the dairy farmer can produce wool and mutton at a profit.

With good dairy buildings it is an easy matter to provide open sheds for the sheep, and in case of severe weather during the lambing period space can be provided in the dairy barn for a few of the ewes to drop their lambs. Of course, such an arrangement means a lot of extra work for a few days at lambing time, but few of us can get along so as to avoid some of these little troubles in handling our cows and other farm stock. In fact, if sheep are worth keeping on our farms they are worth this small amount of trouble for a few days during the lambing season. The main problem is to regulate the number of sheep kept on the farm and plan the mating season so as to minimize these troubles during the lambing period. A small flock of well-bred sheep on the dairy farm can be made to pay fine profits, while a large flock may prove a losing proposition.

Great Lakes-St. Lawrence Waterways Congress

Big Meeting at Detroit, Favors Early Action by United States Government

THE Great Lakes-St. Lawrence Tidewater Congress, where more than a thousand delegates and guests assembled from every part of the nation, came to an end in Detroit last Saturday afternoon, and the message that went out from the three days of sessions is making itself felt in all parts of the United States and Canada.

This is the greatest internal development problem ever undertaken by the American people and while sectional and narrow-minded opposition may temporarily delay the project it can never defeat it; at least one is bound to this conclusion after listening to the data presented at this congress and get the inspiration coming from its sessions.

This project will mean much to the agricultural development of the central and western states. Upon wheat there will be a saving of five cents per bushel to the farmers and upon other grains a saving in like proportion. It will aid in stabilizing prices and will afford an export market for many products of these states that under existing conditions cannot enter into export trade at all.

Gardner S. Williams, of Ann Arbor, told the congress that the combined navigation and power development of the St. Lawrence River, as proposed, is entirely feasible and imperative to future industrial growth. The construction of the canal would lower the level of the lakes, Mr. Williams said, but this would not be serious. It might require the deepening of some harbors.

Between \$700,000,000 and \$750,000,000 was Mr. Williams' estimate of the cost of the entire project, \$300,000,000 for the construction of the canal from the lakes to the sea and \$400,000,000 or more to erect the power stations. The sale of the power, he estimated, would net a fifteen per cent gross return on the \$400,000,000 investment.

Professor Williams said the use of power from the St. Lawrence River for industry and traction in the United States portion of the circle named would result in an annual saving at once of 20,000,000 tons of coal.

Regarding construction Mr. Williams said: "So long as the navigation is small in volume and confined to light draft boats, the plan adopted of constructing canals around the rapids is the most economical, but in the case of a deep waterway commerce the canals must be eliminated as far as possible, both on account of the restricted speed of transit through them and of the danger of collision entailed by the narrow channels, and the full width of the river must be utilized wherever practicable. To accomplish this the fall now extending over the forty-six miles of rapids must be concentrated at a few points, by the construction of dams, creating slack water pools above them, with locks at each dam to pass the traffic up and down. The construction of these dams, which are imperative in the interest of navigation, afford the ideal condition for the utilization of the water power and the two interests, navigation and power, may easily be brought to work in harmony."

Senator Lenroot, of Wisconsin, declared that this project will become an accomplished fact as certain as the return of the seasons. He continued: "The west demands it! Not alone because it will primarily benefit the interior of our country, but it demands it because the project is national in its scope and will benefit the entire nation. The arguments are all in its fa-

vor, and the only wonder is that it has not already been accomplished. The reasons now existing for it, however, are so compelling in their force, that it can no longer be delayed. I am informed that the volume of transportation in the United States has in six years increased forty-seven per cent, while the transportation facilities have increased less than two per cent. The primary cause of the breakdown of the railroads when taken over by the government in 1917 was the railway congestion from Pittsburgh east, and especially at the port of New York. That was the neck of the bottle, and it became completely choked.

"That condition was only partially relieved during the war. It still exists to a large degree. The only solution is the early completion of this waterway, or the building of vast terminals at New York, and additional tracks between Chicago and New York, and the expenditure of hundreds of millions of dollars in railway equipment. The cost of this alone would much more than pay for the entire St. Lawrence project, while the revenue from the St. Lawrence route would not only pay interest upon its cost, but also return the principal within a few years.

"With this project completed, railroads will be saved hundreds of millions of dollars in new expenditures without suffering any loss of new revenue to them. The power produced from the completion of the project it is estimated will save 25,000,000 tons of coal annually, equal to more than 500,000 carloads. If this relief could be had immediately there would be no danger of the people of the northwest freezing next winter. And besides, the coal would be saved for future use. Competition is going to be very sharp in the future. In meeting it, transportation cost will be one of the most important factors, and the difference between the cost of rail transportation to New York and deep

water transportation to the ocean may easily be the difference between success and failure in export business so far as industries in the interior of the continent are concerned.

The necessity of carrying through this project at once to relieve the embarrassment of the present agricultural and general industrial situation was made clear in a letter to the congress by Herbert Hoover. In part he said: "There is absolutely no question that requires so definitely a constructive program as our whole transportation problem. Today both railways and waterways are far behind the productivity of our country on every hand. Agricultural and general industry are embarrassed by the lack of transportation; the margins between the producer and the consumer are extravagantly widened by failure to secure proper distribution. As our country grows in its productivity, it will be found that the outlet for the proper transportation of bulk commodities will lie rather by water than by rail between those points where such transportation is possible."

It was declared by Mr. Nelson that sixty-five per cent of the wheat production of the country is within the shipping radius of the Great Lakes and that seventy-five per cent of the wheat production of Canada is within the same radius.

This region, in the very heart of the nation, tributary to the Great Lakes, with but one-third of the nation's area and population, produces about one-half to seven-eighths of the principal staples, excluding cotton and tobacco.

It provides our surplus of wheat, meats and dairy products, and leading minerals. It produces seventy-five per cent of the wheat, sixty-five per cent of the corn, and one hundred per cent of the flax; eighty-five per cent of the iron; eighty per cent of the copper; seventy-four per cent of the zinc, and forty-six per cent of the lead, and fifty

per cent of the potatoes and sugar beets. It possesses more than fifty per cent of the nation's cattle, swine and dairy cows; sixty per cent of the horses and seventy-two per cent of the nation's measured coal reserves.

From a study of the best available government statistics it will be observed that twelve of these states produce \$1,138,000,000 worth of slaughterhouse products out of \$1,652,000,000, the total production of the United States. Three states alone produce \$117,000,000 worth of rubber goods out of a national total of \$223,000,000. The automobile industry of this area produces \$540,000,000 of the nation's total output of \$632,000,000, or eighty-seven per cent.

The production of butter, cheese and condensed milk is \$242,000,000 or about two-thirds out of a total for the United States of 364,000,000. Agricultural implements, \$133,000,000 out of a total of \$164,000,000 of the nation comes from this area bordering on the Great Lakes.

Where Industry Is.

In the census of manufactures of 1914, the last authentic figures, we find that \$9,000,000,000 out of a national total of about \$24,000,000,000 worth of manufactures, or more than a third—thirty-seven and a half per cent—of America's production came from the cities tributary to the Great Lakes. But the strictures of high transportation costs are making themselves felt.

The grain areas of the northwest are actually falling off in production because of the higher cost of going over to the systems of intensive agriculture with fertilizers on this once virgin land.

The cost of intensive production plus the present high freight rates to the open sea will make it impossible for the farmers of this great area to compete with countries of virgin soils and cheap labor, such as Russia and Argentina. It is an economic axiom that the total cost is the cost of production plus the cost of transportation.

The farmer receives only that amount which is left from the world's market prices after deducting the cost of transportation, including middleman's profit. Any expedient that will lower the cost of transportation and cut out the rehandling with its large costs, and cut down the percentages of the commissions and profiteers will leave the farmer a greater reward for his labor, and the consumer a more equitable standard of living.

Better for All.

Free access to the sea for the western and middle-western farmers would give them a much larger portion of the prices paid in the world's market for their products. The effect on the manufacturer would be to lower his ultimate cost in the world's market.

By lowering prices he would increase his sales and his production, which in most industries result in lower cost of production in his own factory. Thus a great benefit would result, in the reduction of the high cost of living to the American consumer and the American producer, including the farmer, the manufacturer, the laborer, and the employer, by the construction of the St. Lawrence waterway.

H. C. Gardner, president of the tidewater association, hopes to have the appropriation necessary to begin the work through congress before March 4, 1921. This demand for speed in the adoption of the project, as the greatest interior improvement of its kind ever attempted by the United States, was stressed in all the addresses of speakers throughout the three days.

The Grasshopper Outbreak

Present Status Of This Pest In Michigan

THE summer of 1920 marked the third year of the present grasshopper outbreak and the injury just inflicted has been by far greater than that at any time in the past, owing to the constantly increasing proportion of land in the North coming under cultivation. The grasshoppers that are responsible are the lesser migratory locust (*Melano-plus atlantis*) and the Pellucid locust (*Camula pellucida*), together with smaller numbers of other species. The writer had an opportunity to observe a similar outbreak of the same species in Minnesota and Wisconsin in 1895 and 1896. All of the northern part of the lower peninsula is at present involved and parts of the upper peninsula. Detached areas as far south as Kalamazoo are asking for guidance in combating the pest.

In most cases the destruction of the hoppers has been accomplished by the use of poisoned baits, since this plan is entirely feasible and the baits are easily applied over large areas of rough country, and furthermore past experience has shown that a dollar goes farther in killing grasshoppers by this method in Michigan than when expended in any other way. The particular bait recommended was made by sifting one pound of white arsenic

(not arsenate of lead) into a bushel of hard-wood sawdust, to which was subsequently added three-fourths pound of common salt and half a cupful or more of molasses in sufficient water to make a moist mash.

There are other baits more attractive, but also much more expensive, so for this season the cheap, slightly saline, bait was recommended because it worked with entire satisfaction and promised the most dead hoppers for a dollar. Also it is less attractive to creatures other than grasshoppers.

Naturally the present season's outbreak was anticipated and preparatory measures were urged on County Agents and others by our Extension representative, Mr. Russell Hain, early last winter and thereafter. Those in charge being urged to make sure of their white arsenic at a time when the price was round about 9½c to 10c f. o. b. Detroit, in quantity. It seems that the boards of Supervisors who had authority to do so, did not find it possible or feasible to take advantage of this low price, and the price rapidly advanced until, by the time that the grasshoppers commenced to feed on the crops, it had about doubled, worse than that, there was a shortage except at far distant points, which

(Continued on page 130).

What About the "Lazy Lands" of Michigan

By F. H. Sanford

MICHIGAN has a very vital problem before her in the form of her deforested or devastated lands. This problem is daily becoming more acute and its answer must be made by the people of the State themselves before very long.

The increasing prices of lumber and all forest products, coupled with the facts that manufacturers are reaching far out to distant states for their supplies, brings this distressing situation squarely before each of us. One only has to buy a few feet of molding or a board or bunch of shingles to feel the truth of the situation very keenly.

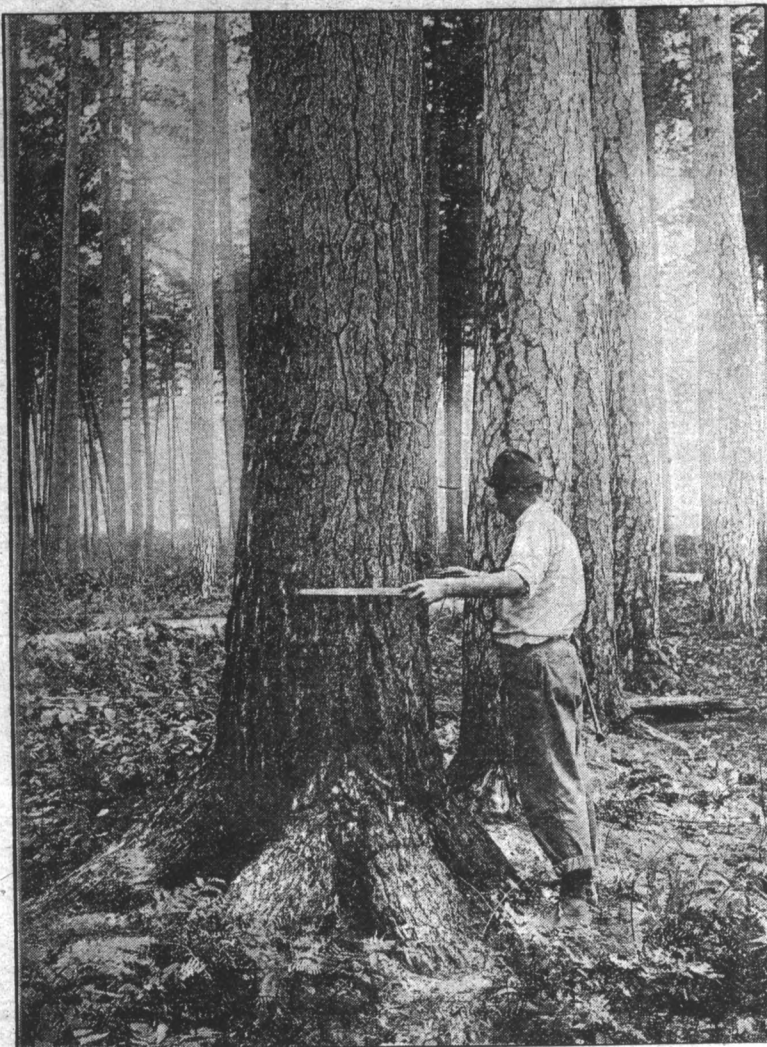
Another appalling condition presents itself to the student of business affairs. Michigan has lost and is still losing her lumber business enterprises. She has long ago given up the most of her saw mills. This in itself is not the most serious aspect of the situation because the labor of these mills was largely a floating—unattached roving and "on the move" kind of labor, but when Michigan gives up without an effort to save them, over seventy-five per cent of her axe handle and other plants working directly from the log, she loses, not only the industries themselves, but she loses a valuable class of labor which might have been a permanent home making, state building factor. The plant that exhausted its timber supply usually moved to the South or West and took its best labor with it. Michigan has been short-sighted in allowing these losses to go on during the past years of its earlier history.

She has allowed the greatest timber wealth of any state to be harvested without a single thought to the future crop of timber for those once heavily wooded lands.

She has developed the lands most fit for agriculture and has converted them into fertile fields. She has devastated the land not desired for agriculture by removing the timber in the same reckless way that good land was cleared.

She has followed the lumbering by destructive fires that burned out the plant food and humus until the best lands were depleted and the poor lands made worthless. All these things have been allowed to go under the eyes of all, while the few who knew what was happening were told over and over that "There is plenty of timber for all."

Devastation of land by fire and destructive lumbering has gone to the limit and now the lands will continue to lie idle and unproductive and the timber shortage become more and more acute. The losses in yield of



Should Michigan's Idle Land Again Produce Trees Like These White and Norway Pines, It Is Safe to Predict that the Cruising Will Be Close and Scientific.

these several millions of non-producing acres in Michigan must be made up and carried by tax on the producing acres. And all the while we are whirling blissfully along toward an actual timber famine which it is yet possible to very largely avoid.

FOR twenty-five years the nation and this State have been giving forestry a place and recognition until today forestry is a recognized profession in the schools and colleges. Unless there was virtue in the work why was State money given to support it? Unless the State expected to use the data obtained from investigations made regarding methods and practices for re-establishing forests—why has this work been state-supported all these years?

There is still need for more investigative work. There is still need for the

training of more foresters in our schools and colleges, but there is enough knowledge and skill developed already to begin the work of reforestation with safety and accuracy.

If the State of Michigan is training her men for other states or for national work she is short-sighted indeed—when she has so many millions of acres of her own land upon which forests may be made to grow again.

As a national issue we hear a great deal about conservation of resources. In fact, the nation has won a great fight in its conservation campaign by establishing 155 million acres of National Forests, which are being handled skillfully and safely against the time when private forest resources are depleted or exhausted.

New York State, through her State Conservation Commission, is annually planting thousands of acres to trees.

The trees are produced by State Nurseries and are distributed free for reforestation purposes.

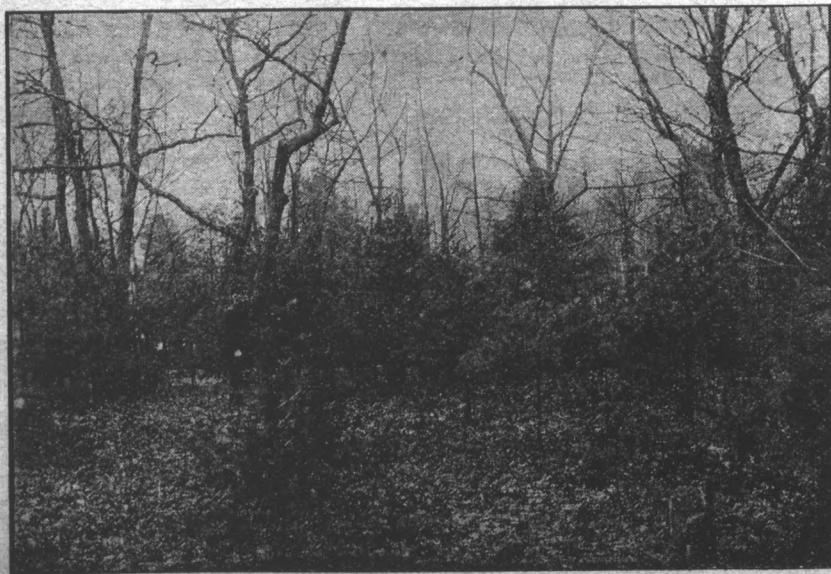
THE WRITER had the opportunity recently to visit large numbers of these new forests of New York and they present an inspiring picture. While Michigan has been lying idle and dormant for twenty years the Empire State has gone through the pioneer stages of forestry and now is able to show new forests—both planted and natural—with trees that vary in age from one year to twenty, and in height from six inches to twenty-five feet.

The familiar watch towers loom from the tops of the loftiest peaks of the Adirondacks and everywhere are evidences of fire protection. In three days of travel through the Adirondacks only one small burn was found—which is the more remarkable and speaks for the splendid efficiency of the system of protection, because during the summer months the woods are filled with the camper and fisher folk from the cities. These forests, both natural and planted, serve as one of the greatest playgrounds in the world for the tired city people who seek health and rest there during their brief vacation periods.

Nor will this item be a minor one in the value and usefulness of Michigan forests in years to come. Recreation as the word suggests—is the rebuilding or recreating of the body. This is nowhere better accomplished than in the open air and under the sun and in the shape of the forest. Our State is rapidly gaining in its reputation for large cities. In these cities the conditions of life are fast becoming similar to those of New York.

In the years to come Detroit alone will furnish its thousands of worn and tired shop workers who must be recreated in a few days of vacation each year. Other cities in this and other states will contribute other thousands for the same purpose. Recreational forests furnish just such opportunities for regaining health and vigor to the individual. Properly supervised and regulated they provide employment for many as well as incomes in rentals and fees to the State.

HOW LONG will it take to produce forests? The time item in forestry for Michigan is important. Timber crops are long time crops. They may be seeded or planted in one year but the growing crops stand on the ground for fifty or one hundred years. Some kinds of timber mature quickly. These are now cheap timbers. Choice



Many of Our Light Soil Cut-over Lands Carry a Scattering Stand of Small Oaks Which Furnish Good Shade for a New Stand of Natural Seeded Pines.



Trained Foresters Make a Complete Study of Logging Wastes, Trace Losses in Operation, and Find Greater Economies in Manufacturing.

Guaranteed Shipments of World's Most Famous Silos

EITHER one of the two foremost permanent silos can be yours this Fall—and at rock-bottom prices. Either one can be on your farm in spite of present material shortage and freight difficulties—fully erected—in ample time to save your corn crop.

All you need do is act quickly!

Each silo will be warranted to fully uphold the fine quality which has made our silos the first choice of thousands of farmers.

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OF THE STATE OF MICHIGAN



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August 31st**

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2. He owns and operates under his personal supervision a large well-equipped farm in Oakland County.
3. He advocates the providing of certain facilities by the State for the better handling and marketing of farm products.
4. He would encourage lake-to-ocean route as outlet to Michigan products and gateway for Michigan necessities.
5. He believes in generous treatment of service-men and their families.
6. He has had broad experience in State affairs as Representative, Senator and Secretary of State and as such took great interest in advancement of child welfare, pure food laws, health laws, laws relating to good roads and the betterment of farm conditions.
7. He has at heart the highest good of the State, the correlation of all its varied activities and the fullest development of its business, social and religious life.

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New Huber bean thresher, slightly used. Half price. Free round trip fare to H. ARNDT, Sunman, Indiana

woods, like oak, cherry, walnut and maple, require a century or more to mature.

Every time a legislature defers the adoption of a definite forestry policy for Michigan, it has very clearly brought the impending timber famine two years nearer to our children of the next generation or two.

Like the national forestry problem, Michigan's situation is two phased. Private ownership of denuded or devastated land constitutes fully three-quarters of the total area, while state forests, parks and lately acquired tax lands make up the balance of the grand total of between seven and ten million acres. The income from this great acreage is so low that it could not of itself pay tax.

A certain part of the privately owned cut over, burned over land is held for purposes of speculation and hope of special sale, but during the interval is producing nothing more valuable than a few of the self seeding, quick growing trees and brush of various kinds.

Such land should be brought into production. Idle land begets sloth in the state and poverty among its people. A careless state cannot expect its citizens to be careful, thrifty or frugal. A land policy for Michigan must come as well as a forest policy.

Soils capable of producing annual crops must be used to produce food

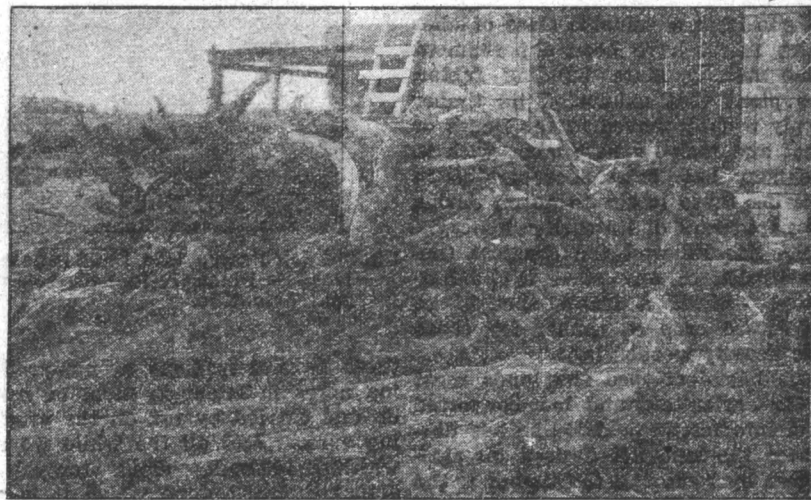
finished the next step must come as a state forest policy. Fundamentally forest soil is not agricultural soil—the agricultural soil may be used to good purpose as forest soil.

Better far to devote agricultural soil to the growing of forest than to permit it to lie idle or in the non-producing state.

HERE let me mention the fact that recently our two farmer foresters of the United States, Gifford Pinchot and Henry S. Graves, have each presented to the people a program of forestry for the United States. While these programs differ materially as to the means by which the states should work, all the all-important fact is that both programs aim for the same good, viz., an effort to prevent or reduce suffering in a few years from an inevitable timber famine.

Whether state or federal control will predominate ultimately in the reforestation of denuded lands of Michigan, should make but little difference at present. What we now need in our State is an open mind for the body politic, a deep-seated sense of responsibility for the future welfare of our own State, and loyalty and backbone enough to demand the right action now.

"The former is the greatest consumer of wood in the United States



A Pile of Stumps to Be Used as Fuel at a Mint Plant.

for the people. Soils not capable of producing food crops must be seeded and planted to trees to be used in furnishing the homes and necessities of life for coming generations. We cannot sidestep the issue or avoid our duty in this matter much longer. When we borrow we acknowledge a day of reckoning to come. We have borrowed the forest resources of Michigan until her power to lend will soon be broken. Do we want to see the finish along these lines?

Clear-headed, far-visioned men for years have been sounding the warning of coming wood shortage, but as always we have listened as to fanatics who raved, and as quietly have taken our leisure.

The apparent ease with which war supplies were raised to meet the greatest crisis, has in the minds of the unthinking, justified that attitude of indifference. But to quote a most reliable authority on this point, if the supplies of maple, walnut, spruce and other valuable woods were to be needed in the same quantity today, "It would be very difficult and far more costly to duplicate the supplies which war consumed."

—more than 35 per cent of our entire production of lumber and more than 50 per cent of our production of all kinds of wood, is used on the farm. Wood is the farmer's chief construction material." This quotation is from the report of the Committee of American Foresters, and shows how vitally a timber shortage must affect farmers.

Farmers therefore should be keenly alive to the situation and ready to act. Next to the State itself, the farmers will be the heaviest losers by a timber shortage. The farmers of the southern portion of Michigan are comparatively secure since the Michigan woodlot insures a working supply for more than the allotted fifty years. However, this fact should in no way induce any owner to sit back and be content. The woodlots of Michigan produce some or many of our choicest woods, while few of them produce the cheaper grades of desirable building material. Every stick of choice timber produced on the farm must ultimately be manufactured with the least waste and sold to the best advantage rather than used back on the farm where cheaper and inferior species will do as well. In other words, our valuable woods must be conserved. Such practice will determine every owner of woodland to support a forestry policy that will demand the production of lumber on every acre not better suited to food production, because the policy for the State cannot hope to produce the so-called "precious woods" of the farm woodlot.

A CAREFUL and thorough soil survey or classification must be the first step in the solution of this big problem. Private as well as public lands must be classed as either having possibilities for agriculture or forestry.

When this classification work is

TRESPASS BY STOCK.

A owns eighty acres of land joining B's. A builds all of line fence between them before B owns land. A built a stump fence partly extending on B's land, but after B bought the land he compelled A to move stump fence and wants A to build a lawful fence for sheep, wants wovenwire fence fifty-four inches high. A moved his own half of fence, and moved the other half off so as to give B a chance to build his half of the fence, but B has failed to build his half. I understand that B don't intend to get sheep to turn in on his land. Is the stump fence legal and all right for other stock?

If A turns his stock on his own land and they get over on B's land or crops, can B stop A from pasturing his stock if they get over on B's land? If A's stock gets over on B's land and then out on highway, and in other people's crops or land, would A be responsible for damages? B's land also runs back farther than A's, and A has no line fence on the back of his land (not joining B's). If B's stock get through his fence on farther (not joining A) and come in on A's land at back where A has no fence, can A hold B responsible for damage done by said stock? If B does not build his half of fence, could A compel him to build it, and what steps should A take to compel B to build it? Can A turn his stock on his land without notifying B first? Would B be compelled to build a woven wire fence fifty-four inches high? Would the stump fence be a legal fence if B has no sheep? If B does pasture sheep, could A not stretch a woven wire fence along the stump fence?

J. Y.

The owner of any land that is wholly unenclosed has a right of action for trespass against anyone whose animals trespass on it, whether they come from the road or the adjoining land. The only case in which the owner is excused is where the land on which the trespass is committed is enclosed, adjoins his, and there has been a legal division of the line fence between him and his neighbor, and he has built his part. If my stock gets through the part of the line fence that my neighbor should build, and wanders onto the land of the next neighbor on the other side who has built his share of his line fence, I am liable for the trespass by my stock. The same is true if they got in from the road. If I have built my part of the line fence and my neighbor has not built his, he is liable to me for trespass by his stock, but I am not liable to him for trespass by my stock and he cannot impound my stock for the trespass. The better way is for the party desiring the fence to be built to call the fence viewers, and get an order on the owner that it be built. If he does not then obey, the complaining party can build it himself and have it charged up to the party who should build it, and assessed and collected as a tax on his land, and paid to the party who built it. A stump fence properly built is a legal fence in this state, and it may be set half on each side of the line.

J. R. R.

VALUE OF BASIC SLAG.

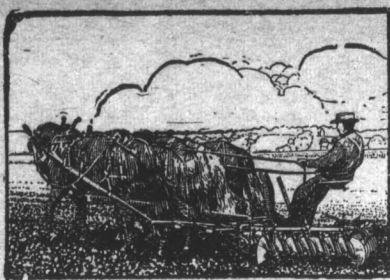
Where can I buy basic slag? Is it better than ground rock phosphate? Would you advise mixing lime and acid phosphate before sowing?

W. L. W.

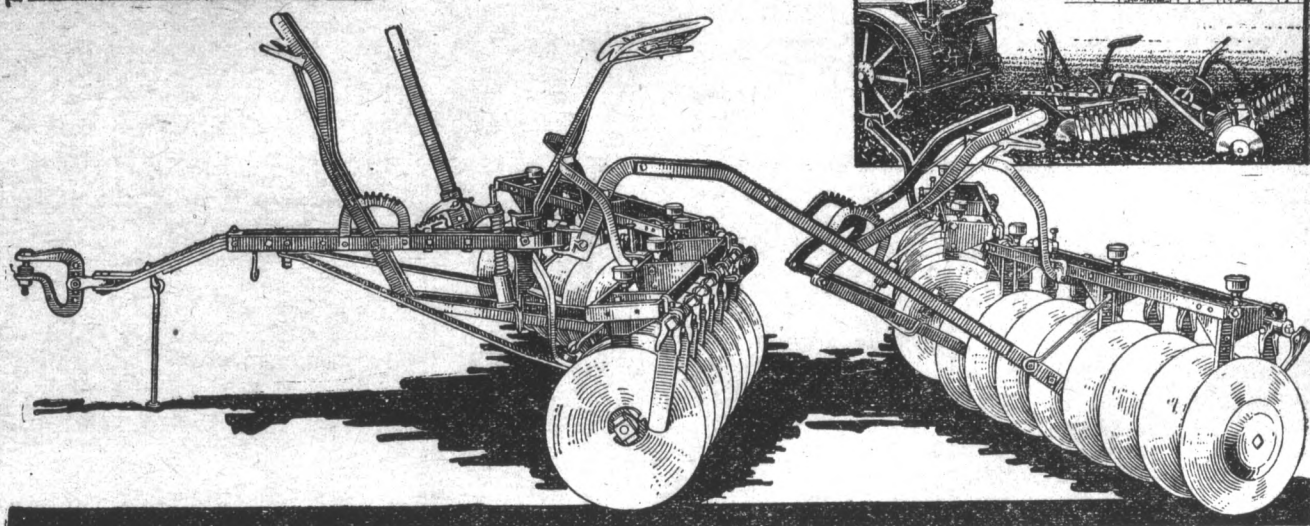
I do not know where you could purchase basic slag. Some of this product is used in the manufacture of fertilizer in this country but it is not shipped here from the sea coast very much. In fact, we have very little of it in this country. It is a good source of phosphorus, as you say, and contains a certain amount of lime, but you can get just as good a product by mixing ground limestone with your acid phosphate. That practically makes basic slag.

It will do no harm to mix ground limestone with acid phosphate. The only trouble is that you will not use enough lime. The better plan would be to put the lime on separately, using a ton of ground limestone per acre, then when you plant your crops put on the acid phosphate.

C. C. L.



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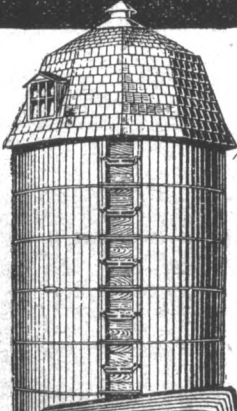
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Easy to erect—no nails or screws—beautiful stock—unblemished and thoroughly seasoned—deeply tongued, grooved and splined to insure permanent airtightness. Makes perfect ensilage and outlasts your grandchildren. A Kalamazoo offers you the only continuous opening door frame that's galvanized after being assembled—to hermetically seal against all destructive action. Our catalog explains other valuable features.

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Dickey Glazed Tile Silos

Best of materials, six different diameters, everlasting hollow tile roof, easiest to build—such features as these have made the Dickey pre-eminent among silos.

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Standard Binder Twine, 500 ft. to lb., 13 3/4 per lb. Less in carloads. Write for circular.

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Trained American Fox Hounds Rabbit and Skunk dogs all ages. Send stamp.

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Creditable Dairy Stories

THE Dairy Division of the Bureau of Animal Industry, United States Department of Agriculture, is doing some highly valuable research work and conducting investigations which are leading to practical results measured in actual financial returns to the dairymen and in the more complete utilization and conservation of dairy products.

The Dairy Division's Swiss cheese investigations are well advanced and are already worth many thousands of dollars to the industry. In the past the successful making of Swiss cheese depended upon favorable atmospheric conditions and other factors which limited the period of cheese-making to certain seasons of the year. It was impossible to make this cheese in winter or from milk held over from one milking to another. In Wisconsin and other states, private interests lost many tons of Swiss cheese because of their inability to overcome weather conditions. And it was impossible to get capital to finance an industry attended with so much uncertainty. The dairy specialists of the Bureau of Animal Industry sought to discover the fundamental causes of this condition. In their investigations they found that by pasteurizing the milk they could destroy the bacteria it contained which except under the most favorable weather conditions acted adversely to the successful production of Swiss cheese, and replace it with bacteria giving the true Swiss cheese flavor at all times. They have thus enabled the American cheese makers to produce Swiss cheese every day in the year, even from milk held over Sunday, and thereby have established a permanent all-the-year-round industry.

The dairy investigators are now working with condensed milk, seeking to determine what organisms cause the milk to "go bad," as is the case at times in the best managed dairies and milk product plants.

During the war the demand came for food conservation. The Department of Agriculture took up the matter with every bureau. Every product in which there was more or less waste by the prevailing methods of handling was carefully considered to see what means could be devised for recovering the food contents ordinarily wasted. Skim milk was found to be one of these waste products. Millions of pounds of this product were annually dumped into the sewers.

As a means of utilizing the skim milk, the specialists settled on cottage cheese. Men were sent to the factories to teach the creamery butter makers how to make cottage cheese. These men co-operated with the state authorities, and cottage cheese was selected because it was not difficult to prepare. Then there was little commercial cottage cheese being used and it had no market. The Dairy Division engaged forty women to go out and tell the people of the food value of this cheese.

In spite of the fact that this move was criticized and the source of some ridicule at first, the demand has increased marvelously and enormous quantities of cottage cheese are now sold throughout the country.

The division is now working on other skim milk cheeses, on Italian cheese, and an albumen cheese. One-half of the milk now produced is made into butter, and butter removes only one-half the food content from the milk. The albumen, casein and sugar left in the milk are all good food. The specialists have recently worked out and patented for the public a method of drying albumen. Whey butter, of which large quantities are now made in cheese factories, is one of the re-

sults of these investigations conducted by the Dairy Division.

The Dairy Division is also working with animals on an extensive scale. At its Beltsville farm, a few miles out in Maryland, it has several large projects under way. One is a study of the principles of animal breeding, with the object in view of finding out if possible how to develop a strain of cattle that will be uniformly high producers. The specialists are working on the problem as to whether it is better to line breed or cut cross. The common practice is to line breed. They have a definite project, now four years under way, and which will take several more years to complete, to establish definitely whether or not it is more effective to use unrelated breeders or line breed. Several colleges are working in co-operation with the division in this investigation, the department furnishing the bulls and securing records of their achievements.

Why is it that one cow under normal conditions gives twice as much milk as another? Is it her breeding, her feed or other cause?

Dr. Meigs at the Beltsville farm is trying to find out the problem of milk secretion. He has found that cows that are not fed grain during the dry period will be limited in their milk production the following year. This is due to insufficient mineral matter. He has taken ordinary dairy cows, somewhat run down in condition and production, and by feeding them on such minerals as calcium and phosphorus, brought them back to productivity. Considerable effect has been noticeable in the milk yield when these minerals have been fed shortly before lactation, especially from phosphorus. Disodium phosphate is the form used, which is fed with the grain.

Dr. Meigs is also making progress with his investigations of different kinds of proteins in ordinary feeding stuffs, to see which gives the best results in milk secretion. It has been noted for some time that certain proteins stimulate milk production more than others. This is found due to the fact that they are more productive of amino acids than the others. As an example, he finds a certain amount of amino acid in the blood system. He has analyzed the blood, and found that the amount of amino acid decreased as much as 34 per cent in passing through the glands of a cow in milk, whereas with a dry cow there was no change in amino acids, showing that in producing milk the amino acid must be drawn on constantly, which indicates that a method of determining the amino acids in different feeds may enable the feeder to replenish this element more quickly and more economically with one protein feed than another.

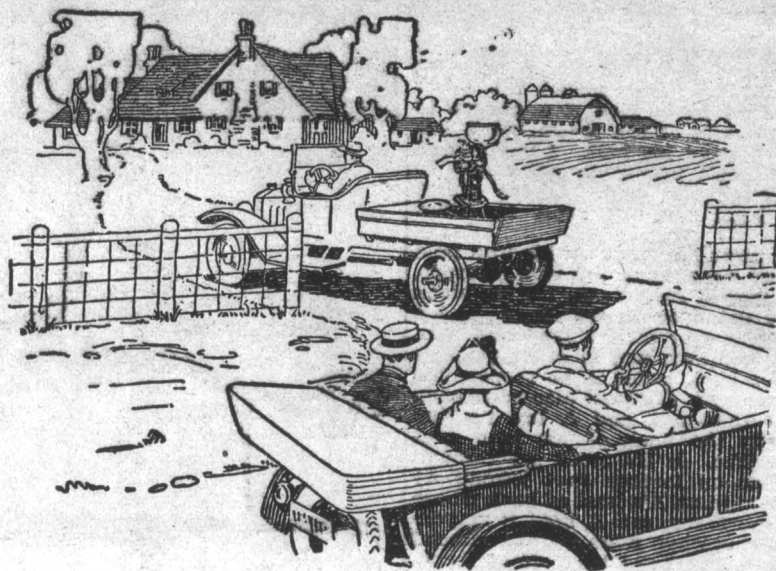
These investigations are undoubtedly fundamental and of great value, as they reach the basis of economic feeding for milk production.

It is evident to all who have given the subject attention that no state could undertake a big breeding project such as that in progress at Beltsville. It is a national problem, and there is no reason why one state should carry on experiments equally beneficial to all parts of the nation. And it is also apparent that Congress is justified in appropriating funds for the study of breeding of dairy animals, when you remember that the dairy cattle are worth over two billion dollars, and their product over three billion dollars annually.

If the economy of production largely depends on the amount of production per cow, and since breeding is the most important way of getting

(Continued on page 129.)

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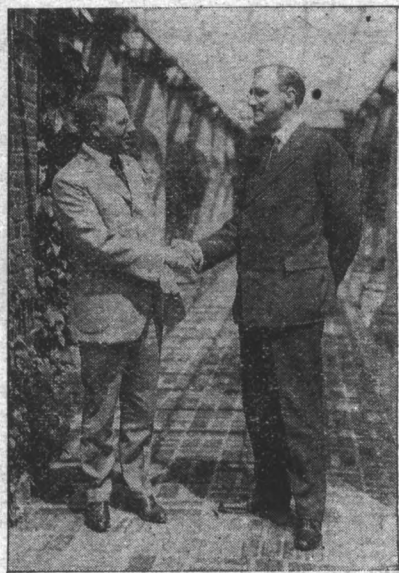
Mrs. Franklin D. Roosevelt, wife of Assistant Secretary of the Navy, with four of their five children and their favorite Scotch collie.



Dr. Scott of Chicago removes flesh from his thigh and grafts to his wife's limb to avoid amputation.



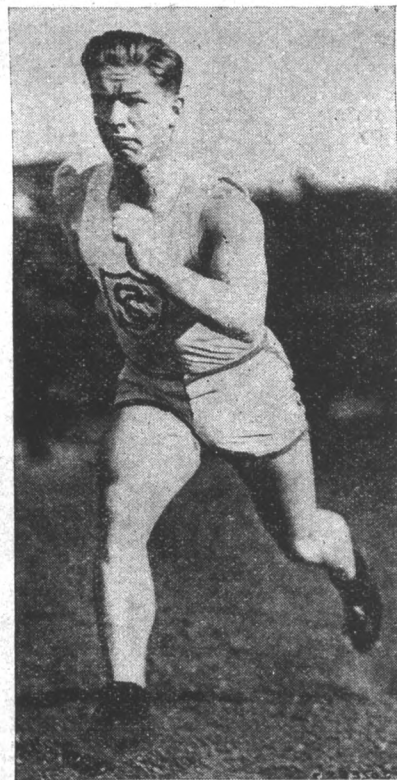
A recent photograph of the father and stepmother of Democratic nominee for President.



Gov. Cox and Franklin D. Roosevelt.



Babe Ruth knocks out his twenty-fifth home run after his friends present him a diamond-studded charm.



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Cowboy rides wild steer to entertain the Elks.

THE VALLEY OF THE GIANTS

A ROMANCE OF THE REDWOODS

By Peter B. Kyne

At great length Moira described Bryce in minute detail and related to her eager auditor little unconscious daily acts of kindness, thoughtfulness, or humour performed by Bryce—his devotion to his father, his idealistic attitude toward the Cardigan employess, his ability, his industry, the wonderful care he bestowed upon his fingernails, his marvelous taste in neckwear, the boyishness of his lighter and the manishness of his serious moments. And presently, little by little, Shirley's resentment against him faded, and in her heart was born a great wistfulness bred of the hope that some day she would meet Brya Cardigan on the street and that he would pause, lift his hat, smile at her his compelling smile and, forthwith proceed to bully her into being friendly and forgiving—browbeat her into admitting her change of heart and glorying in it.

To this remarkable state of mind had Shirley Sumner attained at the time old John Cardigan, leading his last little trump in a vain hope that it would enable him to take the odd trick in the huge game he had played for fifty years, decided to sell his Valley of the Giants.

Shortly after joining her uncle in Sequoia, Shirley had learned from the Colonel the history of old man Cardigan and his Valley of the Giants, or as the townspeople called it, Cardigan's Redwoods. Therefore she was familiar with its importance to the assets of the Laguna Grande Lumber Company, since, while that quarter-section remained the property of John Cardigan, two thousand five hundred acres of splendid timber owned by the former were rendered inaccessible. Her uncle had explained to her that ultimately this would mean the tying up of some two million dollars, and inasmuch as the Colonel never figured less than five per cent. return on anything, he was in this instance facing a net loss of one hundred thousand dollars for each year obstinate John Cardigan persisted in retaining that quarter-section.

"I'd gladly give him a hundred thousand for that miserable little dab of timber and let him keep a couple of acres surrounding his wife's grave, if the old fool would only listen to reason," the Colonel had complained bitterly to her. "I've offered him that price a score of times, and he tells me blandly the property isn't for sale. Well, he who laughs last laughs best, and if I can't get that quarter-section by paying more than ten times what it's worth in the open market, I'll get it some way, if it costs me a million."

"How?" Shirley had queried at the time.

"Never mind, my dear," he had answered darkly. "You wouldn't understand the procedure if I told you. I'll have to run all around Robin Hood's barn and put up a deal of money, one way or another, but in the end I'll get it all back with interest—and Cardigan's Redwoods! The old man can't last forever, and what with his fool methods of doing business, he's about broke, anyhow. I expect to do business with his executor or his receiver within a year."

Shirley, as explained in a preceding chapter, had been present the night John Cardigan, desperate and brought to bay at last, had telephoned Pennington at the latter's home, accepting Pennington's last offer for the Valley of the Giants. The cruel triumph in the Colonel's handsome face as he curtly rebuffed old Cardigan had been too apparent for the girl to mistake; recalling her conversation with him ament the impending possibility of his doing business with John Cardigan's receiver or executor, she realized now that a crisis had come in the affairs of the Cardigans, and across her vision there flashed again the vision of Bryce Cardigan's homecoming—of a tall old man with his trembling arms clasped around his boy, with grizzled cheek laid against his son's, as one who, seeking comfort through bitter years, at length had found it.

Presently another thought came to Shirley. She knew Bryce Cardigan was far from being indifferent to her; she had given him his opportunity to be friendly with her again, and he had chosen to ignore her though sorely against his will. For weeks Shirley had pondered this mysterious action, and now she thought she caught a glimpse of the reason underlying it all. In Sequoia, Bryce Cardigan was regarded as the heir to the throne of Humboldt's first timber-king, but Shirley knew now that as a timber-king, Bryce Cardigan bade fair to wear a tinsel crown. Was it this knowledge that had led him to avoid her?

"I wonder," she mused. "He's proud. Perhaps the realization that he will soon be penniless and shorn of his high estate has made him chary of acquiring new friends in his old circle. Perhaps if he were secure in his business affairs—Ah, yes! Poor boy! He was desperate for fifty thousand dollars!" Her heart swelled. "Oh, Bryce, Bryce," she murmured, "I think I'm beginning to understand some of

your fury that day in the woods. It's all a great mystery, but I'm sure you didn't intend to be so—so terrible. Oh, my dear, if we had only continued to be the good friends we started out to be, perhaps you'd let me help you now. For what good is money if one cannot help one's dear friends in distress. Still, I know you wouldn't let me help you, for men of your stamp cannot borrow from a woman, no matter how desperate their need. And yet—you only need a paltry fifty thousand dollars!"

Shirley carried to bed with her that night the woes of the Cardigans, and in the morning she telephoned Moira McTavish and invited the latter to lunch with her at home that noon. It was in her mind to question Moira with a view to acquiring additional information. When Moira came, Shirley saw that she had been weeping.

"My poor Moira!" she said, putting her arms around her visitor. "What has happened to distress you? Has your father come back to Sequoia? Forgive me for asking. You never mentioned him, but I have heard—There, there, dear! Tell me all about it."

Moira laid her head on Shirley's shoulder and sobbed for several minutes. Then, "It's Mr. Bryce," she wailed. "He's so unhappy. Something's happened; they're going to sell Cardigan's Redwoods; and they—don't want to. Old Mr. Cardigan is home-ill; and just before I left the office, Mr. Bryce came in—and stood a moment looking—at me—so tragically I—I asked him what had happened. Then he patted my cheek—oh, I know I'm just one of his responsibilities—and said 'Poor Moira! Never any luck!' and went into his—private office. I waited a little, and then I went in too; and—oh, Miss Sumner, he had his head down on his desk, and when I touched his head, he reached up and took my hand and held it—and laid his cheek against it a little while—and, oh, his cheek was wet. It's cruel of God—to make him—unhappy. He's good—too good. And, oh, I love him so, Miss Shirley, I love him so—and he'll never, never know. I'm just one of his—responsibilities, you know; and I shouldn't presume. But nobody—has ever been kind to me but Mr. Bryce—and you. And I can't help loving people who are kind—and gentle to nobodies."

The hysterical outburst over, Shir-

ley led the girl to her cozy sitting-room upstairs and prevailed upon the girl to put on one of her beautiful negligees. Moira's story—her confession of love, so tragic because so hopeless—had stirred Shirley deeply. She seated herself in front of Moira and cupped her chin in her palm.

"Of course, dear," she said, "you couldn't possibly see anybody you loved suffer so and not feel dreadfully about it. And when a man like Bryce Cardigan is struck down, he's apt to present rather a tragic and helpless figure. He wanted sympathy, Moira—woman's sympathy, and it was dear of you to give it to him."

"I'd gladly die for him," Moira answered simply. "Oh, Miss Shirley, you don't know him the way we who work for him do. If you did, you'd love him, too. You couldn't help it, Miss Shirley."

"Perhaps he loves you, too, Moira." The words came with difficulty.

Moira shook her head hopelessly. "No, Miss Shirley. I'm only one of his many human problems, and he just won't go back on me, for old sake's sake. We played together ten years ago, when he used to spend his vacations at our house in Cardigan's woods, when my father was woods-boss. He's Bryce Cardigan—and I—I used to work in the kitchen of his logging-camp."

"Never mind, Moira. He may love you, even though you do not suspect it. You mustn't be so despairing. Providence has a way of working out these things. Tell me about his trouble, Moira."

"I think it's money. He's been terribly worried for a long time, and I'm afraid things aren't going right with the business. I've felt ever since I've been there that there's something that puts a cloud over Mr. Bryce's smile. It hurts them terribly to have to sell the Valley of the Giants, but they have to; Colonel Pennington is the only one who would consider buying it; they don't want him to have it—and still they have to sell to him."

"I happen to know, Moira, that he isn't going to buy it."

"Yes, he is—but not at a price that will do them any good. They have always thought he would be eager to buy whenever they decided to sell, and now he says he doesn't want it, and old Mr. Cardigan is ill over it all. Mr. Bryce says his father has lost his courage at last; and, oh, dear, things are in such a mess. Mr. Bryce started to tell me all about it—and then he stopped suddenly and wouldn't say another word."

Shirley smiled. She thought she

AL ACRES—The New Dairy Maid Believes in Playing Safety First.

—By Frank R. Leet



understood the reason for that. However, she did not pause to speculate on it, since the crying need of the present was the distribution of a ray of sunshine to broken-hearted Moira.

"Silly," she chided, "how needlessly you are grieving! You say my uncle has declined to buy the Valley of the Giants?"

Moira nodded.

"My uncle doesn't know what he's talking about, Moira. I'll see that he does buy it. What price are the Cardigans asking for it now?"

"Well, Colonel Pennington has offered them a hundred thousand dollars for it time and again, but last night he withdrew that offer. Then they named a price of fifty thousand and he said he didn't want it at all."

"He needs it, and it's worth every cent of a hundred thousand to him, Moira. Don't worry, dear. He'll buy it, because I'll make him, and he'll buy

it immediately; only you must promise me not to mention a single word of what I'm telling you to Bryce Cardigan, or in fact, to anybody. Do you promise?"

Moira seized Shirley's hand and kissed it impulsively. "Very well, then," Shirley continued. "That matter is adjusted, and now we'll all be happy. Here comes Thelma with luncheon. Cheer up, dear, and remember that some time this afternoon you're going to see Mr. Bryce smile again, and perhaps there won't be so much of a cloud over his smile this time."

When Moira returned to the office of the Cardigan Redwood Lumber Company, Shirley rang for her maid. "Bring me my motor-coat and hat, Thelma," she ordered, "and telephone for the limousine." She seated herself before the mirror at her dressing-
(Continued on page 127.)

The People Christ Admires

Our Weekly Sermon—By N. A. McCune

CHRIST has been pictured so much as a dreamer, a gentle idealist with long hair and easy manners, that it has become habitual for thousands to think of him so. They find it difficult to conceive of him in any other way. But the Christ of the New Testament is not so. He is in direct contact with life as no one else has ever been. He knows men as no other man has known them. "He knew what was in man." And he knows the forces back of life, the thoughts that fill our minds, the motives that lead us to do this or that; thoughts and motives that we perhaps would want no one else to know. Hence, it is not hard to ascertain the kind of people that He respects the most. It comes out on page after page, of the gospels.

IN His parables he continually refers to the man who acts. He loves the man who decides on a course, and then follows it up with action. Here is the great story of the talents. The first man was entrusted with ten talents, the next with five, the last with one. Each was to use the money the best he could, and increase it, the talents representing the ability of the man. To make it more concrete, it may be interesting to know that a talent was about twelve hundred dollars. The first two are persons of enterprise and alertness. They invest the money and get good returns. The third is a pessimist. He complains about his employer, and soldiers on the job. He says he has a hard man to work for. The first two are highly commended for their faithfulness, but the last is denounced for his idleness. Take the case of the widow who is determined to have justice, and keeps at it, until she gets it. (Luke 18:2.) Then, there is the friend at midnight (Luke 11:8), who came and hammered till he got his loaves. Or, there are the virgins who looked ahead, and bought extra oil, to be used in case of emergency. (Matthew 25.) All these instances turn on the use of the will. They represent energy, as a prime quality in successfully entering and living, the Kingdom life. But the person of indecision, the one who does not know his own mind, is at the other end of the scale. He gets short shrift. These people represent the "half-thought-out-life," as it has been well called. They are the drifters, the slackers. This, Jesus pounds home until it would seem that there should not be a drifter in all the churches anywhere, at least among the folks who have read the Bible attentively.

THERE is the fellow who is forever saying what he is going to do, but never does it. And there is his broth-

er who receives a new idea with utmost enthusiasm, but is so shallow that he cannot go on with it.

OUT it must not be supposed that Christ is for the strong, only, the favored and the few. He has a place for the most unpromising, the weak, the outcast, if they will only act up to the limit of their strength and intelligence. The poor man who goes up to the temple and beats his breast, saying, "God be merciful to me a sinner," the widow who drops her mite into the treasury, for all such he has praise and promise. And when those come to him, who have traveled the broad highway that leads downward, and look to him for help, what a welcome they receive! Think of the woman of the street, who came uninvited to the banquet (Luke 7.) Think of Zaccheus, who had gotten his wealth by grafting on the taxes, and who promises to restore whatever is not rightfully his. Action, decision, energy in pursuing what one knows to be the right course, is the quality that the Master of men rejoices to find.

ONE time a country preacher was holding some revival services. In the congregation was a farmer whose wife was a devoted member of the church. The farmer himself resolved to turn over a new leaf, and become a Christian. He went to the pastor and asked how he should begin. "Go and act," said the minister, "just as you believe that a Christian should act." The man went home, and the next morning he asked the blessing at the table. He had never done such a thing before, but he did the best he could. Then he asked one of the children to bring the Bible. He read a chapter, and knelt and tried to offer a prayer. It was awfully hard work, but he got through as well as he could. His wife was scandalized. "How can you do this, when you are not a converted man?" He replied, "The pastor told me to do whatever I believed a Christian would do, and I always believed that a Christian father ought to have family worship." But now came the rub. He and his neighbor, Mr. Brown, across the road, had not spoken to each other for three years. They had had trouble over an auction sale. He went over to Mr. Brown's, found him milking, and told him he was sorry for what had happened, and wanted to hold no grudge against any man. They shook hands, and our farmer had not gone many steps in the direction of his house when he knew that a change had come in his life. He had acted on the light he possessed, and action had brought peace.



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Woman's Interests

Women As Voters



THEY SAY the best speech made at the Republican convention in Chicago was made by a woman, Mrs. Douglas Roosevelt Robinson, sister of the late Theodore Roosevelt. She seconded Wood's nomination. And, what is more, the second best speech was made by another woman, Alexandria Carlyle Peiffer, of Boston, who seconded Gov. Coolidge's nomination. Women are going in for politics, and going in strong. And while you who read this may have no yearning desire to stand up in a huge Coliseum and make a speech, at least you want to vote and vote wisely.

And here is why you want to vote. Five million, four hundred and eleven thousand people in the United States cannot read and write English. And yet, millions of them can vote. Of these, one million six hundred and fifty thousand are foreign born, one million, five hundred and thirty-four thousand are native-born whites, and the rest are colored. Many of these illiterate citizens, who cannot read a newspaper, write their own name, or even read the ballot which they cast, are voting for congressmen to make laws to govern you, and a president to enforce them. Perhaps someone tells them how to vote wisely. But can you afford to take a chance?

In these troubled times when so much is at stake, not only in America but in the world, every intelligent woman should go to the polls. But before she does she owes it to herself, her family and her country to educate herself. The National League of Women Voters is doing its best to spread education, and every community should turn its women's clubs into clubs for the enlightenment of women voters during these months which precede election. The league has mapped out a series of seven programs for mass meetings, which cover every question to be raised. Every county has its local orators who can be secured to cover any subject your community cannot handle. The programs follow:

- 1.—Political party organizations, caucuses, conventions, committees. The importance of the caucus. Getting the women out. What is the league of women voters?
- 2.—How the local (city or rural) government functions. Problems my community faces. The taxes I pay.
- 3.—The present situation in education in our state and county. The importance of education in a democracy. School needs in my community. Getting the voters out to school meeting.
- 4.—How a president is nominated, how elected. The platforms of the parties. The duties of the president. Presidential candidates.
- 5.—General re-registration — why? How? How a political campaign is conducted. What qualifications should a voter have.
- 6.—Recent modifications in state governmental organization. Com-

pare your state government with other states. Industrial legislation in your state. Social legislation in your state. Care of the dependent, defective and delinquent in your state. 7.—Important national legislation of recent years. Needed national legislation. The legislative process. Practical directions in the mechanics of voting.

Here is work enough to keep the clubs busy right up until November's election. Every community has some

the foregoing program.

The League also recommends the following reading. It is brief and non-technical:

"American Citizenship"—By Charles A. Beard and Mary Ritter; published by the Macmillan Company, New York; price \$1.00.

"The Woman Citizen"—By Mary Sumner Boyd; published by Frederick A. Stokes Co., New York; price \$1.50.

"The Woman Voter's Manual"—By Shuler Forman; published by the Century Co., New York; price \$1.00.

nell; 25c per copy, reduced rates in quantities. (Order of Judson Grenell, 328 Thompson St., Ann Arbor, Mich.)

GETTING EVEN WITH SOCIAL GRAFTERS.

BY HILDA RICHMOND.

VERY few neighborhoods are free from men and women who graft off their fellow beings in a social way, and unblushingly enjoy the good things and the good times provided by the hard workers. At picnics, at Grange suppers, at public sale dinners, at church socials, at school reunions, and all the other occasions where congenial, open-handed neighbors meet to eat and visit when work is not too pressing on the farm, the grafters are in evidence. And though they are coldly received occasionally when the patience of the busy ladies runs low, they carry on their work of reducing the high cost of living without noticing the hints or slights. As a rule, men are more tolerant of the shirk than are women, because men think a chicken more or less, or a few pies given away amount to nothing, whereas women know that it is hard work to get up good things, and most exasperating to see lazy families eating them or carrying them home.

In many communities the grafters are tolerated for the sake of their relatives, or because nobody wants "to have trouble with neighbors." But in other places the women who are fair and generous and hard working have secretly banded themselves together to head off the drones. One offender who always went to a picnic with tomatoes to slice in vinegar, when tomatoes were rotting in gardens, and who took her whole family to feast off the good chicken and pies and cakes provided by others awoke to the fact one fine day that all social affairs in her neighborhood seemed to come on days when she and her family were away from home. Their scheme of reducing the high cost of living also included much visiting, and she observed that impromptu picnics and parties were the rule that season, and always the dates were set for the time when she was away with her family. She tried staying at home three weeks in succession but not a single social occasion came her way. Neighbors "dropped in" on other neighbors in little groups, but there was nothing of a formal character that she could be angry about, as the women kept their lips closed and were as bland and friendly as could be when they met the grafter. She was not a dull woman by any means, nor was she content to be left out of social affairs, so she accepted the situation with what grace she could muster, and when at last they gave her a chance to get back into the social life her basket was as generously filled as any. She was well able to do her part and the women forced her to meet her social obligations.

In another instance a woman notorious for being a slacker was routed by a new comer in the community. The older residents had patiently endured the annoyance year in and year out, but the spirited newcomer declared that she would not bake cake and fry

Summer Days

By Lydia M. Thornton



Down in the meadow the air is fresh
With the breath of blooming clover;
And the daisies nod at the willow's feet
Where the dancing brook flows cool
and sweet
The lowland borders over.
There's a hint of clouds in the azure
sky,
Like boats that have drifted far and
high,
Needs of a world ignoring;
And far in the west of her waiting
nest
With an eager heart in her feathered
breast
An oriole goes soaring.

Far in the west the sun goes down
In a shifting cloud of glory;
And whether in country home or town
The little children, gold-tressed or
brown,
Are waiting a bed-time story.
Hush, for the summer twilight falls
Hush, for a night bird softly calls,
And the fogs are downward press-
ing.
If we bow in fear or have mete of
cheer,
Lord of the zenith of the year
Give us tonight thy blessing.

sort of woman's club, farm club, neighborhood club, W. C. T. U., or perhaps only a church society or a fraternal organization. Any of these groups could take the lead—and should take some action—to educate the women who want to vote and only need encouragement. Helps in the way of literature may be secured by writing Mrs. Wilbur Brotherton, 106 Pingree Ave., Detroit, Mich. Mrs. Brotherton is president of the Michigan league, which league prepared

"The American Commonwealth"—By James L. Bryce.

"American Government and Politics"—By Charles A. Beard.

"Woman's Part in Government"—By Wm. H. Allen; published by Dodd, Mead & Co., New York; price \$1.50.

"Handbook for Women Voters of Michigan"—25c per copy or \$2.00 for ten. (Order of Bertha G. Buell, Ypsilanti, Mich.)

"What Michigan Women Should Know About Voting"—By Judson Gre-

chicken for Mrs. X. and her big family. At a church affair or community picnic she would pounce upon the "measly" donation brought by the grafter and show it everywhere. "Just look at the lovely pickles Mrs. X. brought," she would say in all seriousness, opening the basket and publicly displaying the scanty things. "Aren't they delicious looking?" Mrs. X. was ready to sink through the floor or do personal violence to the intrepid young woman. Of course, the others had difficulty in keeping their faces straight, but the young woman was as sober as a judge.

Still another community was considered easy picking by a large, imposing looking woman whose husband owned more property than anyone else in the neighborhood. This woman would descend upon a sewing party and try to browbeat the women into selling her food or comforters or rugs at half price because she was a neighbor, and a neighbor should have special prices, or else she would buy up a lot of stuff at fair prices and then discover that she had forgotten her purse. Later, if she paid at all, she jeweled the women down or sent a check for much less than the amount and complained that some of the things were spoiled or not worth as much as she thought at first. At last one woman forgot the relatives of the slacker, forgot patience, forgot that it was a church affair, forgot everything except that women with less money and more honesty had been robbed for years by the grafter, and she calmly and deliberately told that woman what her standing was in the community, and that as president of the largest club and church organization in the community she intended to see that her schemes were at an end. Everybody gasped for breath and a few people said it was too bad to say such things publicly, but when it was all over the whole community benefitted by the effects of the thunder storm. The woman "got mad," of course, but she did not graft any more off her neighbors, and even her own husband said she received nothing more than she deserved at the hands of the long-suffering women.

Happily we are getting to the place where the sacred word of neighbor no longer covers a multitude of sins in progressive communities. To be sure, neighbors are quick to respond to all appeals for aid and to help each other in work, though some men are selfish and churlish in wanting to get more than they give. But when it comes to social affairs, the hard-working, generous women have the right to exclude grafters, and they should do it. It robs a social occasion of all happiness to see women with their children placidly eating up the best of everything they can lay their hands on when they have contributed nothing to the feast, and the sooner they are taught a needed lesson the better. They are in every organization for what they can get rather than what they can give, and have to be carried along as a dead weight unless taught the all-important lesson of "share and share alike" in providing. In nine cases out of ten the offenders are well-to-do, even rich, and it is only selfishness and greed and laziness that keep them from being fair and honorable in social life.

When frying eggs or anything else that causes hot grease to pop in every direction, especially on the hands, try sprinkling a little flour into the hot fat before beginning to fry the food.—Mrs. J. J. O'C.

In the United States 20 per cent of the adult rural population can not read; in seven states more than 20 per cent of the total population over ten years of age is illiterate.

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Michigan State Sanatorium, Howell, Mich.

MICHIGAN FARMER PATTERNS. CATALOG NOTICE.

Send ten cents in silver or stamps for our up-to-date spring and summer 1920 catalog, containing 550 designs of ladies', misses' and children's patterns, a concise and comprehensive article on dressmaking, also some points for the needle (illustrating thirty of the various, simple stitches) all valuable hints to the home dressmaker.

No. 3204—Ladies' House Dress. Cut in seven sizes, 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 will require $2\frac{1}{2}$ yards of 24-inch material. The width of the dress at the foot, with plaits extended, is $2\frac{1}{4}$ yards. Price 12 cents.



No. 3190—An Attractive Apron. Cut in four sizes: Small 32-34; medium 36-38; large 40-42; extra large 44-46 inches bust measure. A medium size will require $5\frac{1}{4}$ yards of 36-inch material. Price 12 cents.



3255. A Charming Gown. Cut in 7 Sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. A 38 inch size will require $7\frac{1}{4}$ yards of 48 inch material. The width of the skirt at lower edge is $1\frac{1}{4}$ yard. Price 12 cents.

3256-2746. A Dressy Frock.

Waist 3256 Cut in 7 Sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 2746 Cut in 7 Sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. Width of skirt at lower edge is $1\frac{1}{4}$ yard. A medium size will require $7\frac{1}{4}$ yards of 36 inch material. Two separate patterns, 12 cents for each pattern.



No. 3063.—Dress for Home Wear. Cut in six sizes, 34, 36, 38, 40, 42, and 44 inches bust measure. Size 38 requires $5\frac{1}{4}$ yards of 36 inch material. Width of skirt at lower edge is $1\frac{1}{4}$ yard. Price 12c.

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Chicks, Leghorns, Minorcas, Spanish, Houdans, Camplines, Reds, Rocks, Orpingtons, Brahmas, Wyandottes. Tyrone Poultry Farm, Fenton, Mich.

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Our Boys' and Girls' Department

Seeing Worth-while Things—By Uncle Ed

BOYS AND GIRLS, if you want to test yourself, eyesight and faculty of fixing things well in your mind quickly and surely, sit down after you have had a trip in the auto some day and write out a list of the things you have seen on the way. How many houses? How many different kinds of trees? What varieties of crops have you seen growing? Name as many birds as you can that you have seen. Think of all the flowers your eyes have rested on as you have flitted through the country. In short, put every possible thing you can down on your sheet of paper. Then lay it away, and next time you make such a trip, do the same thing over again, write down the story and compare it with that you first made. Keep on adding to this record from time to time and see how your powers of seeing things will have increased.

Then try making a similar list of everything you hear when you are on the way across the country. Think of the sounds that break on your ear—the lowing of cows or calves, the whinny of horses, the songs of birds, the whispering of the winds through the trees, the voices of men and women and boys and girls. Your little story will surprise you when it has all been written down; but this faculty of hearing things may be developed in the same way that sight may. We will after a while hear things that were entirely shut out from us in the beginning.

And this testing of one's ability of seeing objects, hearing sounds and otherwise trying our powers of perception and observation will be of greater value than we at first think. Some men seem to go through life without getting much that passes before their vision. They miss most of the comforting sounds of this world. They get little joy out of the many beautiful things all around us in nature. It may be they excuse themselves on the ground that they are too busy; but it is not right that any of us should live in that way. I heard a young farmer say: "This is such a beautiful world if a fellow only had time to straighten up and look at it." Something about that made me feel bad. It was a confession that he was losing one of the most valuable parts of his life experience on the farm. It will rest any man, no matter how much he may have to do, just to stop once in a while, lift his eyes from his work and look away off over the coun-

try. He will go back to his work with new vim and courage for this bit of a respite.

In another way this faculty of seeing things and hearing them may be of value to the farmer boy or girl. Take sound, for example. Can you tell by the sound of the farm implements, engines and so on, whether they are running right or not? If your ears are well trained you can detect trouble in one of these implements and may be able to stop it and prevent serious damage.

Have you read about the delicate instruments that were invented in the time of the war for the purpose of listening out at sea for the sound of the propellers of submarines? So keen did the ears of some of the soldier

use these faculties of which we have been speaking. The boy who is quick to hear and to respond; who sees quickly the thing that is to be done and springs to it; who anticipates the thought and wishes of others with whom he may for the time being be working, is almost sure to advance in position rapidly. For the world needs young folks everywhere who are quick to think, eager to learn, and ready to do whatever is given them to do.

And here is the best of it all. We may discipline ourselves to shut out the things that would tend to hurt us, body, soul or mind. There is no better determination than to do just that very thing. It will make us happier, better and far more successful men and women.



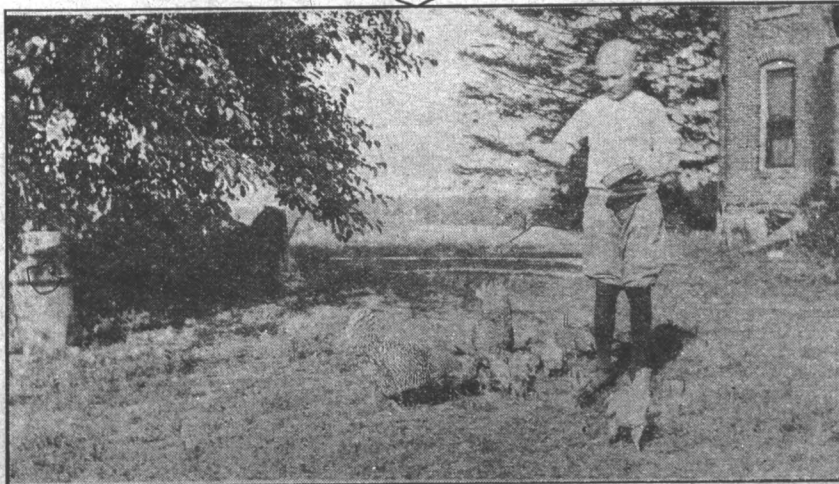
Norma and Earl Wing Teaching Their Pet Goat Latest Styles in See-Sawing.

HOW I FELT DURING MY FIRST AEROPLANE FLIGHT.

BY RUSSELL BENNETT.

WHILE in the service during the recent world war I made the acquaintance of an aviator. Returning to civil life, we kept up the friendship and because of this I was invited to make a flight. My friend got into his seat, and I followed with much misgiving. I was in and strapped tightly. The pilot shouted "contact." There was a roar. We were moving. Good-bye sweet life, we were off the earth. Bud, my chum, looked back at me and pointed to the earth, but I was afraid of tipping the plane so did not look, but I knew that so long as the engine runs you are safe.

But suddenly the engine stopped. I looked quickly to earth to find a convenient haystack, but alas, we were over nothing but tall buildings. How relieved I was when he turned and remarked "this was the life," speeded up his engine, quieted down, went, or intended to go, into a loop but failed and went into a tail spin. My sensations were terrible, to say the least. A cemetery far below loomed up. We finally straightened out and then I was pressed back into my seat violently and we did the loop not once but twice. Then he shut off the motor. I had a sickening feeling as he pointed the nose toward the earth and dropped. I had visions of certain people drawing insurance from my name, but at once he flattened out. We glided down to earth; the plane bumped the ground. The pilot asked me how I felt, it being my first flight. I told him cowardly, "Oh, flying is here all



Albert Riggs of the French Landing Poultry Club Feeding His Choice Barred Rocks.

right, but it needs a lot of improvements, a muffler on the engine, a real windshield instead of a piece of mica which keeps you from poking the pilot and asking him how the engine is acting."

I cannot see where aviation is more

dangerous than railroading, because in my six years' experience with railroads and in the army and navy I have been in seven railroad wrecks, and one submarine fight, while in my eleven flights in a plane, I have had no mishaps.

The Valley of the Giants

(Continued from page 123.)

table and dusted her adorable nose with a powder-puff. "Mr. Smarty Cardigan," she murmured happily, "you walked rough-shod over my pride, didn't you! Placed me under an obligation I could never hope to meet—and then ignored me—didn't you? Very well, old boy. We all have our innings sooner or later, you know, and I'm going to make a substantial payment on that huge obligation as sure as my name is Shirley Sumner. Then, some day when the sun is shining for you again, you'll come to me and be very, very humble. You're entirely too independent, Mr. Cardigan, but, oh, my dear, I do hope you will not need so much money. I'll be put to my wit's end to get it to you without letting you know, because if your affairs go to smash, you'll be perfectly intolerable. And yet you deserve it. You're such an idiot for not loving Moira. She's an angel, and I gravely fear I'm just an interfering, mischievous, resentful little devil seeking vengeance on—"

She paused suddenly. "No, I'll not do that either," she soliloquized. "I'll keep it myself—for an investment. I'll show Uncle Seth I'm a business woman, after all. He has had his fair chance at the Valley of the Giants, after waiting years for it, and now he has deliberately sacrificed that chance to be mean and vindictive. I'm afraid Uncle Seth isn't very sporty—after what Bryce Cardigan did for us that day the log-train ran away. I'll have to teach him not to hit an old man when he's down and begging for mercy. I'll buy the Valley but keep my identity secret from everybody; then, when Uncle Seth finds a stranger in possession, he'll have a fit, and perhaps, before he recovers, he'll sell me all his Squaw Creek timber—only he'll never know I'm the buyer. And when I control the outlet—well, I think that Squaw Creek timber will make an excellent investment if it's held for a few years. Shirley, my dear, I'm pleased with you. Really, I never knew until now why men could be so devoted to business. Won't it be jolly to step in between Uncle Seth and Bryce Cardigan, hold up my hand like a policeman, and say: 'Stop it, boys. No fighting, if you please. And if anybody wants to know who's boss around here, start something.'"

And Shirley laid her head upon the dressing-table and laughed heartily. She had suddenly bethought herself of Aesop's fable of the lion and the mouse!

When her uncle came home that night, Shirley observed that he was preoccupied and disinclined to conversation.

"I noticed in this evening's paper," she remarked presently, "that Mr. Cardigan has sold his Valley of the Giants. So you bought it, after all?"

"No such luck!" he almost barked. "I'm an idiot. I should be placed in charge of a keeper. Now, for heaven's sake, Shirley, don't discuss that timber with me, for if you do, I'll go plain, lunatic crazy. I've had a very trying day."

"Poor Uncle Seth!" she purred sweetly. Her apparent sympathy soothed his rasped soul. He continued:

"Oh, I'll get the infernal property, and it will be worth what I have to pay for it, only it certainly does gravely elude me to realize that I am about to be held up, with no help in sight. I'll

see Judge Moore to-morrow and offer him a quick profit for his client. That's the game, you know."

"I do hope the new owner exhibits some common sense, Uncle dear," she replied, and turned back to the piano. "But I greatly fear," she added to herself, "that the new owner is going to prove a most obstinate creature and frightfully hard to discover."

True to his promise, the Colonel called on Judge Moore bright and early the following morning. "Act Three of that little business drama entitled 'The Valley of the Giants,' my dear Judge," he announced pleasantly. "I play the lead in this act. You remember me, I hope. I played a bit in Act Two."

"In so far as my information goes, sir, you've been cut out of the cast in Act Three. I don't seem to find any lines for you to speak."

"One line, Judge, one little line. What profit does your client want on that quarter-section?"

"That quarter-section is not in the market, Colonel. When it is, I'll send for you, since you're the only logical prospect should my client decide to sell. And remembering how you butted in on politics in this county last fall and provided a slush-fund to beat me and place a crook on the Superior Court bench, in order to give you an edge in the many suits you are always filing or having filed against you, I rise to remark that you have about ten split seconds in which to disappear from my office. If you linger longer, I'll start throwing paper-weights." And as if to emphasize his remark, the Judge's hand closed over one of the articles in question.

The Colonel withdrew with what dignity he could muster.

(Continued next week.)

"SO NEAR AND YET—"

BY LEMUEL L. DE BRA.

On a summer day when it's scorching hot

And I'm out in the sizzling field;
And the sun beats down from a cloudless sky

Like a red-hot copper shield;
When I'm wringing wet with a scalding sweat,

'Tis then that I think all day
Of that swimming pool, so nice and cool,

Just 'leven miles away!

Sunshine Hollow Items

By Rube Rubicon

Peter Brown says that some folks are so mean that they actually like to see a kid turn out bad so they can say, "I told you so." Peter has got three "I told you sos" on his neighbor, Oren Jackson, but he hasn't sprung one of them. We can't help but like Peter as it is a mighty good man who has a chance to say, "I told you so," and yet grits his teeth and controls himself.

Ima Knutt and her husband Chester Knutt had a fight last Spring. Ima cut Chester's nose off with a cleaver but bandaged it on quickly. They have just taken the bandage off and Chester's nose is wrong side up. Now he nearly drowns when he goes out in the rain and every time he sneezes he blows his hat off.

Solomon Chase lives by the motto, "Grin and bear it." He says that he knows the bugs will reap all he plants. But why not grin and spray the bugs, Solomon. Folks don't gain anything in this world by bearing a lot of troubles that they can prevent by the use of brains and pep.

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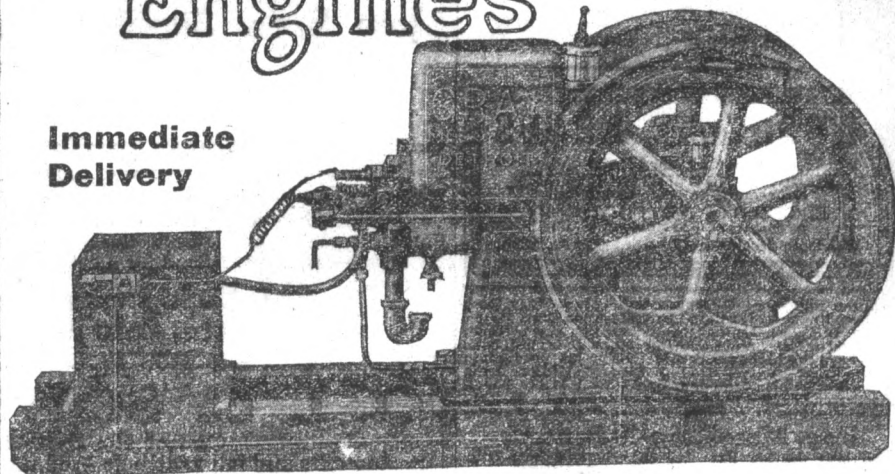
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Effies Lass 238203 sold on May 6th for \$7100. She was sired by Black Monarch 3rd. We are offering for sale Editor of Wildwood 295059 a full brother in blood lines to Effies Lass also four more choice bulls which are old enough for service and sired also by the champion show and breeding bull Black Monarch 3rd.

Our herd is under State and Federal Supervision.

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ORION, MICHIGAN

W. E. SCRIPPS, Prop., Sidney Smith, Supt.

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ELCHO OF HARVIESTOWN (45547)
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by Escort of Harviestown (38008)
Woodcote Stock Farm, Ionia, Mich.

Three registered Guernsey bull calves, May Rose breeding, closely related to Spottwood Daisy Pearl, Dolly Dimples, Langwater Nancy, Langwater Hope, Langwater Daisy and imported Itchen Daisy 3rd, cows that have the higher milk and butter fat production of the breed. Calves sired by Albany's King of Anna Dean Farm; his grand dam Spottwood Daisy Pearl, Alec Harper, Edward Lowe, Robinson Rd. Grand Rapids, Mich.

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One bull service age, 17 months old bull calf. Farmer prices. Send for picture and pedigree. Herds on Federal Accredited List. GILMORE BROTHERS, CAMDEN, MICH.

GUERNSEYS. Federal Inspected. Headed by only son of Carrie of Hillhurst exchampion of A. A. class, 7 bulls under 10 mos. old and any 10 of 25 reg. females for sale. Write or come and see. G. W. & H. G. Ray on Electric R.R., 4 mi. east of Albion, Mich.

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Reg. Holstein Bull calf born Dec. 19, a beauty 1/2 white reg. and del. for \$100, would take Liberty Bond. J. R. HICKS, St. Johns, Mich.

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Write for Catalog Sale Starts 1 P. M.

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Closing Out Auction of

Bloss Bros. Sophie's Tormentor Jersey Cattle

Swartz Creek, Mich., (on Grand Trunk Ry.)

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the day before the Michigan Jersey Cattle Club meeting at East Lansing.

There are 40 head in the sale, the herd is headed by Champion Torono's Son 7th whose brother sold for \$7500, and is the sire of 20 R. of M. daughters.

Besides his sons and daughters there are a number of cows by a son of Hood Farm Pogis 9th and others close up to Foxhall's Jubilee, Interested Prince and Rioter's Jersey Lad. Send for a catalog.

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1	"	"	105 lbs. milk in 1 day
1	"	"	686 lbs. milk in 7 days
1	"	"	2669 lbs. milk in 30 days
1	"	"	100 lbs. milk in 1 day
1	"	"	20654 lbs. milk in 1 year
1	"	"	100 lbs. milk in 1 day
1	"	"	659 lbs. milk in 7 days
1	"	"	18675 lbs. milk in 1 year

Others under test are making large milk records. A fine lot of young bulls from 3 months to 2 years old for sale. Get a "milk" bull, and increase milk production in your herd.

Our herds are under U. S. supervision.

McPHERSON FARMS CO., Howell, Mich.

HOLSTEIN

BULL CALVES FOR SALE

From dams with good records.
BULL CALVES Sired by 45 lb. BULL.
BULL CALVES Sired by 34 lb. BULL.
BULL CALVES Sired by 33 lb. BULL.
PRICES VERY REASONABLE.
Privilege of return if not satisfied.

A. W. COPLAND, Birmingham, Michigan.

Herd under State and Federal Supervision.

31.06 lb. butter 57.46 lb. milk in 7 days, is average of 9 nearest tested dams of 2 mo. old bull. Price \$150. Terms. M. L. McLAULIN, Redford, Mich.

A Good Note accepted in payment of finely bred registered Holstein bull calves. Quality of the best, and at prices within reach of all. Write. GEO. D. CLARKE, Vassar, Mich.

CLUNY STOCK FARM

A Semi-Official Bred Bull to Head Your Herd

Maplecrest Application Pontiac No. 132652, heads

Our Herd

His dam's record is 1344.3 lbs. butter 23,421.2 lbs. milk in 365 days, and 35.103 lbs. butter and 515.6 lbs. milk in 7 days.

One of his sons from our good record dams will carry these great blood lines into Your Herd.

For Pedigrees and Prices write to R. Bruce McPherson, Howell, Mich.

The Traverse Herd

We have what you want in BULL CALVES, the large, fine growthy type, guaranteed right in every way. They are from high producing A. R. O. ancestors. Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

Holsteins of Quality

Fifteen High Grade Holstein Cows For Sale
E. A. HARDY, Rochester, Mich.

Increase the Efficiency of your DAIRY HERD

by using a Registered Holstein Sire

We have bulls of all ages listed at reasonable prices. Also grade and pure-bred cows and heifers.

Michigan Holstein-Friesian Asso.

Old State Block, Lansing, Mich.

Registered Holstein cows and heifers due to freshen R. this fall. Some bred to a 42 lb. bull. Price \$200 to \$400 each. B. B. REAVEY, Akron, Mich.

Entire Herd of 10 Reg. Holsteins for \$2500. 7 cows, 2 heifers, 1 bull. GEO. B. PARDEE, Gallen, Mich.

HEREFORDS

20 Cows and Heifers of popular breeding for sale also bulls not related.

ALLEN BROS. PAW PAW, MICHIGAN

Herefords. Just purchased 3 new herds, now have 150 head; we offer you anything desired either sex, horned or polled, any age. Priced reasonable. THE McCARTYS, Bad Axe, Mich.

Herefords: 4 Reg. bulls 5 to 8 mo. old. Prices reasonable for quick sale visitors welcome. Reed Schultz, R. 3, Homer, Mich.

Cloverdale Farm

Register of Merit Jerseys

Tuberculosis Free Accredited Herd

A fine young Jersey Herd Sire with Register of Merit dam with record of 733.14 lbs. butter as Junior 4 yr. old. His half sister out of same dam is in Register of Merit with record of 521 lbs. butter as senior 2 yr. old. He is a fine specimen showing great length, depth and spring of rib. Solid color fine head and neck, straight back, large and well placed rudiments. His sire Golden Ida's Noble King. Traces 11 times to Golden Lad. Also a young bull, 5 mos. old out of Eminent Rose of Avon, in R. of M. with record of 47.5 lbs. butter as 2 yr. old by Eminent's Exile of St. Lambert, whose dam is in R. of Merit with record of 733.14 lbs. butter as junior 4 yr. old. Come and see them, we rather talk than write. Send for pedigrees.

Geo. M. Conyer & Son,

Doster, Mich.

Jersey Bulls For Sale.

Sophie, Tormentor Family, straight from healthy individuals. Sired by Brookhurst S. Tormentor 163,258, Son of Sophie 19th Tormentor 113,302, and Sophie Cora 325,289, who finished among the first ten in her class on Register of Merit test 1919. Herd free from tuberculosis. Prices low. Particulars and extended pedigree furnished on request. BROOKHURST FARM, Farmington, Mich.

The Wildwood Farm

Jersey Cattle, Majesty strain. Herd on State accredited list, R. of M. testing constantly done. Bulls for sale. ALVIN BALDEN, Phone 443-5, Capac, Mich.

BUTTER BRED JERSEY BULLS

CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

For Sale Jersey bull calves of Majesty breeding from good producing stock. Herd on Government "Accredited List." Write for price and pedigree to C. A. TAGGETT, R. 2, Fairgrove, Mich.

LILLIE Farmstead Jerseys—A few heifers bred to freshen soon, heifers bred to freshen next fall, 3 cows, R. of M. bull calves. C. O. Lillie, Coopersville, Mich.

Register of Merit
Smith and Parker, Howell, Michigan.

For Sale. Jersey bull ready for service sired by Flying Fox's Gay Lad. Dam record 472.5 lbs. butter 8675 lbs. milk. Notten Farm, Grass Lake, Mich.

BIDWELL SHORTHORNS

a bull that will put weights on your dairy calves—the difference will soon pay for the bull. Now selling good Scotch and Scotch-topped yearlings, reasonably priced. A roan, senior yearling, a Missie of Villager breeding, a herd bull prospect, Federal Test.

BIDWELL STOCK FARM, Box D, Tecumseh, Michigan

We Now Have

a number of choice bred scotch females of any age for sale also three bulls from 6 to 18 months old. Visit our herd before buying. NORMAN CARR, Bad Axe, Mich.

Richland Stock Farms

Home of the Michigan Champions. Shorthorn Sires in Service:

IMP. Lorne, IMP. Newton Champion, Sterling Supreme. Why not buy a young bull to head your herd that carries the blood that is making Shorthorn History. Only a few real headers left. Write your wants.

C. H. PRESCOTT & SONS, Tawas City, Mich.

Shorthorns New list 39 bulls, 49 females. Central Mich. Shorthorn Asso. write OSCAR SKINNER, Sec., Gowen, Mich.

Shorthorns Scotch and Scotch Topped bulls and heifers priced right. Sultan Champion heads, herd, one scotch two yr. old herd bull by Red Cumberland priced right. H. J. FLOWER & SON, Milo, Mich.

Milking SHORTHORNS. Clay bred bull calves Herds under Federal Supervision. Davidson & Hall, Beand & Beland, Tecumseh, Mich.

Shorthorns Good Scotch bred bulls, cows and heifers, priced right. W. B. McQUILLAN, R. 7, Howell, Mich.

MEADOW Hills Shorthorns. Herd headed by Silver King, full brother of Lavender Sultan Purdue University's great sire. For sale females of all ages, a few young bulls. Geo. D. Doster, Doster, Mich.

Milking Shorthorns of best Bates breeding, bulls 6 to 8 mo. old for sale. E. H. KURTZ, Mason, Mich.

Shorthorn Bulls Eight to ten months old of Scotch and Scotch Topped breeding. Lawrence P. Otto, Charlotte, Mich.

Shorthorn bull registered age 18 mos. Red, little white. Kind, peaceable and an exceptionally good individual. Write or come and see him. Roy W. Weinberg, Vicksburg, Mich. Bell phone 188F4.

Twenty-one Head of Registered Shorthorn cattle for sale. MRS. B. C. WHITAKER, Chelsea, Michigan. Bell Phone.

Reg. Red Polled cattle choice young bulls from 6 to 18 mo. old for sale. FRANK KEBLER, R. 1, Grand Ledge, Mich.

HOGS

Berkshires size with quality is our specialty. Write your wants to M. G. MOSHER & SONS, Osseo, Mich.

Registered Berkshires, Gilts, and Sows bred for April May and June farrow. A yearling Boar and a few younger Spring pigs. Chase Stock Farm, Marlette, Mich.



Spring pigs by Walt's Orion, First Sr. Yearling Detroit, Jackson, Cd. Rapids and Saginaw 1919

Phillips Bros, Riga, Mich.

CREDITABLE DAIRY STORIES.

(Continued from page 120.)

production, and economy of production will eventually help the consumers, then isn't Congress justified in spending money in the study of this problem?

At the present time the funds appropriated by the government for this dairy cattle breeding project amounts to \$8,000. Imagine a corporation with over two billion dollars invested in its machinery limiting its appropriation for promoting greater efficiency in production to this small sum. It is entirely too small for the work. In explaining the work and its scope, Dr. Charles W. Larson, of the Dairy Division, says they do not want phenomenal animals, but must have good foundation stock. Funds are needed to buy certain animals possessing requirements essential to making the experiments. It is also necessary to keep the daughters of these animals to see what they do, and they must be kept on the government farm to have uniform management. This means that the herd will grow, that it will be necessary to add new buildings, and purchase larger quantities of feed.

Many persons do not understand why the test farm isn't self-supporting. Mr. Larson says if they were permitted to sell their products in the market they could show a profit, not including the investigations. They have furnished to the colleges bulls that would readily sell for \$4,000 to \$5,000. The milk goes to the laboratories, and in experimental work with dairy products, and all returns from sales are turned back into the United States Treasury. An appropriation of \$32,000 was made for an experiment farm in Louisiana, last year, and it returned to the treasury from sales \$22,000. The Beltsville farm would show a profit if they were permitted to sell the milk and surplus animals, in spite of the fact that animals are kept in the in-breeding experiments which would be discarded by the practical dairyman.

While on a visit to the Beltsville farm, I found in the large herd of Holsteins, Guernseys and Jerseys several animals of exceptionally high type and production. Among the number was the Holstein cow, Calamity Wayne Pauline 2nd, the champion butter cow of Maryland, with a record of 22,547 pounds of milk and 855 pounds butter fat. Duchess Calamity Wayne is a fine young cow, milking 55 pounds with first calf. Four daughters of Piebe Laura Ollie Homstead King, a famous Minnesota Holstein sire, one of them Mercedes Laura Ollie, with a record of 20,000 pounds milk, 625 pounds fat, are in this herd. Little Gladis of Hillside, daughter of Hillside Torono, a Hood Farm Jersey sire, is one of four daughters of this bull at Beltsville, making a fine record. There are several herd bulls of excellent quality, and sires of high producing cows. The herd is under the able management of H. T. Converse, formerly of New Hampshire.

In addition to the investigations already mentioned, comparative tests are being made in milking three and four times a day, in methods of stabling, stanchions against box stalls, and in calf feeding for the purpose of securing a home-made substitute for whole milk to replace the whole milk without the use of commercial calf feeds. The Beltsville Farm specialists hope to be able to give out some definite results of these experiments at an early date.

E. E. R.



Good Feed With Good Cows Always Pays

Your cows give three or four pounds of milk per pound of grain fed, if they have the right milk-producing temperament and are properly fed a good **BUFFALO CORN GLUTEN FEED** grain ration and good roughage.

The good dairyman—who has no use for the scrub cow, much less the scrub bull—gets 300 to 400 pounds of milk for every 100 pounds of the **BUFFALO CORN GLUTEN FEED** mixture that he gives his milking herd in addition to the pasture.

Where the summer and early fall milk prices have been settled, it has been on the basis of an ascending scale for July, August and September—the September price being the highest ever paid for September milk. It is reasonably certain that this rise toward higher milk prices will be the rule in all the principal milk markets. Figure out your profit over the cost of your grain feed, on this basis.

If you buy your July, August and September requirements now, your **BUFFALO CORN GLUTEN FEED** will cost you no more than that which you used to make your June milk; and you are thereby assured, as far as **BUFFALO CORN GLUTEN FEED** is concerned, that the entire rise in the milk price will be additional profit. **Feed BUFFALO CORN GLUTEN FEED, summer as well as winter.**

Ask your dealer about the "SPECIAL PRICE GUARANTEE"

Corn Products Refining Co.

New York

MAKERS OF

BUFFALO
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GLUTEN FEED

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Write to

National Starch Co., 606 Ford Bldg., Detroit, Mich.

45 Years on the Line

Come to Headquarters for

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F. W. Brode & Co.

Established 1875.
Incorporated 1915.
MEMPHIS, TENN.

Our Brand on the Tag
Means Quality in the Bag

MICHIGANA FARM

Sells Quality Durocs

Friday August 6th

Bred sows, boars and open gilts. All immunized. Now is the time to start with pure bred when hog market is bad and few are investing. Sell grades and buy good pure breeds at a low initial cost in this our first public sale. Pavilion is in Kalamazoo County on main line of Grand Trunk R. R. at junction of Kalamazoo branch. All are invited.

Write for catalogue.

O. F. Foster, Mgr., Pavilion, Mich.

Duroc sows and gilts bred to Walts King 29499, who has sired more 1st and 2nd prize pigs at the State Fair in last 2 years than any other Duroc boar. Everyone will be a money maker for the buyer. Cat. and price list.
NEWTON BARNHART, St. Johns, Mich.

Thos. Underhill & Son,

Salem, Mich. Breeders of Reg. Duroc Jersey swine. Watch for our sale adv. in Mich. Farmer, July 24 issue, of bred sows, bred gilts, open gilts and boars.

OAKWOOD FARM DUROCS

We can furnish you with anything from a weanling pig to a boar of herd heading caliber at reasonable prices. Your inspection and correspondence is solicited. **RUSH BROS., Romeo, Mich.**

12 Choice Duroc gilts bred to farrow July and August. Daughters of Michigan Cherry Col. bred to Jacks Cherry Orlin King Number 189259. Son of the \$10,000.00 champion Jacks Orlin King 2nd. All large type, heavy bone gilts, 250 to 300 lbs.
THE JENNINGS FARMS, R. 1, Bailey, Mich.

DUROC JERSEYS

E. D. HEYDENBERG, Wayland, Mich.

Am Selling Durocs August 4th. Send for catalog. W. C. TAYLOR, Milan, Mich.

Duroc Jersey fall and spring pigs for sale. We sell you only the best, ship C. O. D. subject to your approval. Register in buyers name and guarantee satisfaction. **W. E. BARTLEY, Alma, Michigan**

CHESTERS two good fall gilts bred to a boar of Wildwood Prince Jr. breeding for Sept. farrow; spring pigs **F. W. ALEXANDER, Vassar, Mich.**

The World's Champion

big type O.I.C.'s. Stock of all ages for sale. Herd headed by Calloway Edd, the World's Champion O. I. C. boar assisted by C. C. Schoolmaster. Grand Champion boar of Michigan, New York and Tennessee state fairs. Also, C. C. Giant Buster, undefeated Senior boar pig wherever shown and Grand Champion of Oklahoma state fair. Get our catalogue of Crandell's prize hogs, Cass City, Mich.



I HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from my great herd in every community where I am not already represented by these fine early developers—ready for market at six months old. Write for my plan—'More Money from Hogs.'
G. S. BENJAMIN, R. F. D. 10, Portland, Michigan

Central Mich. O. I. C.

Swine Breeders Ass'n.

Hogs of all ages of popular blood lines. Every sale guaranteed by association.

DR. H. W. NOBLES,
Sales Mgr. Coral, Mich.

O. I. C.'s. One Sept. boar. March farrowed pigs of either sex.
O. J. THOMPSON, Rockford, Mich.

O. I. C. & Chester White Swine Strictly big type with QUALITY. Spring pigs own ready to ship. Never had better ones. Remember I was breeding Big Type 20 years ago. They have a right to be big. Write us for prices.
NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.

O. I. C.'s A few choice late fall and winter boars, also a fine two year old boar.
WEBER BROS., R. No. 2, Royal Oak, Mich.

O. I. C. Gilts bred for July and Aug. farrow. Also spring farrowed pigs.
G. P. ANDREWS, Dansville, Mich.

O. I. C. Gilts bred for Sept. farrow and spring pigs.
F. C. BURGESS, R. 3, Mason, Mich.

O. I. C.'s Eight young boars and spring pigs for June shipment.
CLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C.'s Booking orders for spring pigs, we register free and ship C. O. D.
A. J. BARKER & SON, Belmont, Mich.

O. I. C.'s 5 last fall boars and 15 last fall gilts bred for fall farrow. Weight 230 to 325 lbs. extra good stock. Also this spring pigs not akin. 1/4 mile west of depot. Citizens phone 124. **Otto B. Schulze, Nashville, Mich.**

MILLER Meadows L. T. P. C. boars all sold. Gilts sired by General Jones and bred to our young boar Alaska, address **CLYDE WEAVER, Ceresco, Mich.**

FOR SALE Registered Big type Poland China gilts bred for Sept. farrow, weighing 225 lbs. for \$80, spring pigs all sold, guarantee satisfaction. **DORUS ROVER, Akron, Mich.**

L. S. P. C.

One 400 lb. sow and 7 pigs by side, price \$100.00. One 275 lb. gilt and 6 pigs by side, price \$85.00. Two choice boars.
H. O. SWARTZ, Schoolcraft, Mich.

Big Type Poland Chinas

Our herd is representative of the best in Big Type. The \$40,000.00 "The Yankee", the \$50,000.00 "The Clansman", and the priceless "Giant Buster" are all represented. We aim to keep up-to-date blood lines and only quality stuff. Boars for sale now **PUBLIC SALE OCT. 28th.** **WESLEY HILE, R. 6, Ionia, Mich.**

L. T. P. C. We have a large number of spring and summer pigs ready to ship sired such boars as "Hart's Black Prince", "Leonard Big Bob", the "Model Clansman" and "Prospect Yank" a great son of the \$40,000.00 Yankee. Write for prices or come and look them over if you are in the market.
HART, FULCHER & CLINE, address F. T. Hart, St. Louis, Mich.

Bred Sow Sale at Fairgrounds August 5th. **Carey U. Edmonds, Hastings, Mich.**

Big Type P. C. Bred gilts, Fall yearlings, prize winners, out 1100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

BOARS! Oh Boys!

Sons and grandsons of the Mighty Giant Buster. The big boned useful kind. Priced for a quick sale.
JNO. C. BUTLER, Bell Phone, Portland, Mich.

Big Bob Mastodon pig, takes the cake, book your order now. Fall boars and gilts sired by a grandson of Disher Giant, open or bred to Big Bob for Sept. 23 yearling sons. **O. E. GARNANT, Eaton Rapids, Mich.**

Big Type Poland Chinas with quality, at reasonable prices. Pigs of both sex, and bred sows and gilts.
G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Big Type Poland all sold out. Watch this ad for further announcements. Breeding stock for sale in season. **L. L. CHAMBERLAIN, Marcellus, Mich.**

LEONARD'S B. T. P. C. bred sows all sold. Order booked for boar pigs at weaning time from Mich. Champion Herd. **E. R. Leonard, R. 3, St. Louis, Mich.**

I am offering Large Type Poland China Sows, bred to F's Orange, at reasonable prices; also fall pigs. Write or call Clyde Fisher, St. Louis, Mich. **R. R. 3.**

"Lindhurst" Poland Chinas

Mammoth Ben's Chief No. 352157 heads our herd. Sows by Mammoth Ben, Upsome Lad, Joe Mastodon, Gortendale Jones, and Capt. Price. Pigs by Mammoth Ben's Chief, Mountain Jack, and Orange Model. For sale fall boars and gilts sired by a son of Bower's Mammoth Joe. A few herd sows priced to sell. Get in line for spring boars.
WM. H. LIND, Otiz, Phone, Alto, Mich.

6th ANNUAL P. C. Bred Sow Sale March 1920. For particulars write **Augusta, Mich.**
W. J. HAGELSHAW,

LARGE TYPE P. C. SWINE. One yearling boar, one fall yearling boar, fall pigs, a few more bred sows. **R. W. Mills, Saline, Mich.**

Poland China Brood Sows Bred for May and June farrow, at reasonable prices, \$50.00.
Maplewood Stock Farm, Allegan, Mich.

HAMPSHIRE

1914 - - - - - 1920

Choice Spring boars, popular breeding. Booking orders for fall pigs. All stock Cholera Immuned and guaranteed Breeders. Satisfaction guaranteed.

STEUBEN'S HAMPSHIRE FARM
R. 3, Angola, Ind.

Edgewood Hampshires All bred gilts sold. Now booking orders for gilts bred for fall farrow, and pigs for pig club work only.
Depew Head, Edgewood Farm, Marion, Ohio.

Large Type Poland Chinas nothing for sale at present. Spring pigs doing fine.
A. A. FELDKAMP, R. 2, Manchester, Mich.

BACON The highest priced pork product. Yorkshires are ideal bacon hogs. For sale, spring pigs, both sexes. **WATERMAN & WATERMAN, Packard Rd., Ann Arbor, Mich.**

Hampshires get your boar pigs, now a few bred gilts left new blood lines of quality.
JOHN W. SYNDER, R. 4, St. Johns, Mich.

HORSES

BAY MARE

For Sale, sound and right in every way, weight about 950 lbs. Must be sold at once come and see her or write **L. J. Hamlin, 496 Huribut Ave., Detroit, Mich.**

Percher n Stallions and mares at reasonable prices; inspection invited.
F. L. KING & SON, Charlotte, Mich.

SHEEP.

KIDS

I cannot sell you any more ewes until next fall. To some grown up, I can offer 10 very good young Shropshire ewes that will lamb in April for \$40.00. Their lambs contracted to me should not more than purchase price next fall. Also 10 mighty nice ewe lambs for \$35.00. Come and see them.
S. L. WING, KOPE-KON FARMS, Coldwater, Mich.

Idle Wild Stock Farms Shropshire yearling rams from prize winning stock. Make your selection early. **Olaf Middleton, Proprietor, Clayton, Mich. R. 3.**

Want a Sheep? Let American Hampshire Sheep Association send you dandy booklet with list of breeders. Write **COMFORT A. TYLER, 22 Woodland Ave., Detroit, Mich.**

Cotswolds yearling rams, ram lambs, Cotswolds ewes all ages sired by **Camden**.
A. M. BORTEL, Britton, Mich.

BREEDERS' DIRECTORY

Change of Copy or Cancellations must reach us
Ten Days before date of publication

Wildwood Farms Angus

Effies Lass 238203 sold on May 6th for \$7100. She was sired by Black Monarch 3rd. We are offering for sale Editor of Wildwood 295059 a full brother in blood lines to Effies Lass also four more choice bulls which are old enough for service and sired also by the champion show and breeding bull Black Monarch 3rd.

Our herd is under State and Federal Supervision.

WILDWOOD FARMS ORION, MICHIGAN

W. E. SCRIPPS, Prop., Sidney Smith, Supt.

WOODCOTE ANGUS

Imported Herd Bulls
ELCHO OF HARVIESTOWN (45547)
by Jason of Ballindalloch (38048)
EDGARDO OF DALMENY (45501)
by Escort of Harviestown (36006)
Woodcote Stock Farm, Ionia, Mich.

Three registered Guernsey bull calves, May Rose breeding closely related to Spottwood Daisy Pearl, Dolly Dimples, Langwater Nancy, Langwater Hope, Langwater Daisy and imported Itchen Daisy 3rd, cows that have the higher milk and butter fat production of the breed. Calves sired by Albany's King of Anna Dean Farm; his grand dam Spottwood Daisy Pearl, Alec Harper, Edward Lowe, Robinson Rd. Grand Rapids, Mich.

Reg. May Rose Guernseys

One bull service age, 17 months old bull calf. Farmer prices. Send for picture and pedigree. Herds on Federal Accredited List. GILMORE BROTHERS, CAMDEN, MICH.

GUERNSEYS. Federal Inspected. Headed by only son of Carrie of Hillhurst exchampion of A. A. class, 7 bulls under 10 mos. old and any 10 of 25 reg. females for sale. Write or come and see. G. W. & H. G. Ray on Electric R.R., 4 mi. east of Albion, Mich.

Registered Guernseys a very fine show calf, this bull calf is out of a cow milking 40 lbs. a day, the price will surprise you, better get his pedigree. J. M. WILLIAMS, North Adams, Mich.

For Sale Registered Guernsey bulls, May Rose breeding cheap if taken soon. Come or write. John Ebeis R. 2 Holland, Michigan.

GUERNSEY BULL CALVES whose sire's dam made 19,460.20 milk, 909.05 fat. Their mother's sire's dam made 15,109.10 milk, 778.80 fat. T. V. HICKS, Battle Creek, Mich.

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

Guernseys Five pure bred Guernsey Bulls. Write your requirements. WALTER PHIPPS FARM, Geo. E. Currie, Mgr., 80 Alfred St., Detroit.



Large Profits from Purebred Holstein Cattle

In the production of milk and butter the larger the cow the larger the profit, other things being equal. This principle has been established through the investigations of government experts and is generally recognized.

When a cow's milking days are over, size is still an important factor. The big Holstein-Friesian, weighing anywhere from 1,000 to 1,800 lbs. with her clean white fat well distributed through her muscular system, proves a most profitable dairy beef animal.

Send for Free Illustrated Booklets.

THE HOLSTEIN-FRIESIAN ASSOCIATION
164 Hudson Street
Brattleboro Vermont.

OUR HERD SIRE Model King Segis Glista

By a 30 lb. son of Lakeside King Segis Alban De Kol. His dam Glista Fenelle 32.37 lbs. Her dam Glista Ernestine 35.93 lbs. His three nearest dams average over 33 lbs and his forty-six nearest tested relatives average over 30 lbs. of butter in seven days. Write for prices on his sons.

Grand River Stock Farms
Cory J. Spencer, Owner Eaton Rapids, Mich.

Reg. Holstein Bull calf born Dec. 19, a beauty 1/4 white reg. and del. for \$100, would take Liberty Bond. J. R. HICKS, St. Johns, Mich.

REGISTERED

Duroc Jersey Swine Sale

To Be Held At

Home Farm, South Lyon, Mich.

AUG. 10th 1920

15 bred sows and gilts, 4 boars, 5 spring sow pigs, 5 spring boar pigs.

Write for Catalog Sale Starts 1 P. M.

J. E. RUPPERT, Auctioneer

Thos. Underhill & Son, Prop., Salem, Mich.

Closing Out Auction of

Bloss Bros. Sophie's Tormentor Jersey Cattle

Swartz Creek, Mich., (on Grand Trunk Ry.)

Thursday, Aug. 19, 1920

the day before the Michigan Jersey Cattle Club meeting at East Lansing.

There are 40 head in the sale, the herd is headed by Champion Torono's Son 7th whose brother sold for \$7500, and is the sire of 20 R. of M. daughters.

Besides his sons and daughters there are a number of cows by a son of Hood Farm Pogis 9th and others close up to Foxhall's Jubilee, Interested Prince and Rieter's Jersey Lad. Send for a catalog.

Col. D. L. Perry, Auct., Columbus, O.
J. V. Cotta, Sale Mgr., Crawfordsville, Ind.

O. I. C. SOWS FOR SALE

One of the Best Herds in Michigan

Spring gilts and fall yearlings bred for March, April and May litters. I ship C. O. D., pay express and register in buyer's name. If you want a BIG TYPE sow, guaranteed right in every way, write me.

J. CARL JEWETT, R. 5, Mason, Michigan.

-WinnWood Herd-

Flint Maplecrest Boy No. 166974
Has Made Good

one of his SONS will raise your herd to a higher standard and better production we have them for sale at moderate prices.

A Few Females For Sale

—OUR JUNIOR HERD SIRE—

Sir Ormsby Skylark Burke No. 264966

A brother to the world champion cow over all breeds.

DUCHESSE SKYLARK ORMSBY Michigan's best bred Ormsby bull. Better get on the list for one of his sons out of a daughter of Flint Maplecrest Boy.

JOHN H. WINN, (Inc.)
Roscommon, Michigan

LONG DISTANCE HOLSTEIN BULL CALF Born Dec. 24 1919. Seven close up dams average above 1200 lbs. butter and 24,000 lbs. milk in 1 yr. His dam untested \$100. A. Fleming, Lake, Mich.

May Echo Sylvia Bull calf. 2 crosses to May Echo M. Sylvia, and 3 crosses to King of the Fontaines. Dam a 2 yr. old daughter of a 23 lb. cow, 6 of his nearest tested dams average 34.49 lb. of butter and 759 milk. C. H. GIDDINGS, Gobleville, Mich.

"TOP NOTCH" HOLSTEINS

McPHERSON FARMS COMPANY

has raised many great milk cows:

1 Officially Produced	842 lbs. milk in 7 days
1 "	3394 lbs. milk in 30 days
1 "	120 lbs. milk in 1 day
1 "	311 lbs. milk in 7 days
1 "	over 10000 lbs. milk in 100 days
1 "	105 lbs. milk in 1 day
1 "	696 lbs. milk in 7 days
1 "	2669 lbs. milk in 30 days
1 "	100 lbs. milk in 1 day
1 "	20654 lbs. milk in 1 year
1 "	100 lbs. milk in 1 day
1 "	659 lbs. milk in 7 days
1 "	18675 lbs. milk in 1 year

Others under test are making large milk records. A fine lot of young bulls from 3 months to 2 years old for sale. Get a "milk" bull, and increase milk production in your herd.

Our herds are under U. S. supervision.

McPHERSON FARMS CO., Howell, Mich.

HOLSTEIN BULL CALVES FOR SALE

From dams with good records.
BULL CALVES Sired by 45 lb. BULL.
BULL CALVES Sired by 34 lb. BULL.
BULL CALVES Sired by 33 lb. BULL.
PRICES VERY REASONABLE.

Privilege of return if not satisfied.

A. W. COPLAND,
Birmingham, Michigan.
Herd under State and Federal Supervision.

31.06 lb. butter 571.46 lb. milk in 7 days, is average of 9 nearest tested dams of 2 mo. old bull. Price \$150. Terms. M. L. McLAULIN, Redford, Mich.

A Good Note accepted in payment of finely bred registered Holstein bull calves. Quality of the best, and at prices within reach of all. Write. GEO. D. CLARKE, Vassar, Mich.

Herefords: 4 Reg. bulls 5 to 8 mo. old. Prices reasonable for quick sale visitors welcome. Reed Schultz, R. 3, Homer, Mich.

Cloverdale Farm

Register of Merit Jerseys
Tuberculosis Free Accredited Herd

A fine young Jersey Herd Sire with Register of Merit dam with record of 733.14 lbs. butter as Junior 4 yr. old. His half sister out of same dam is in Register of Merit with record of 521 lbs. butter as senior 2 yr. old. He is a fine specimen showing great length, depth and spring of rib. Solid color fine head and neck, straight back, large and well placed rudiments. His sire Golden Ida's Noble King. Traces 11 times to Golden Lad. Also a young bull, 5 mos. old out of Eminent Rose of Avon. in R. of M. with record of 47.5 lbs. butter as 2 yr. old by Eminent's Exile of St. Lambert, whose dam is in R. of Merit with record of 733.14 lbs. butter as junior 4 yr. old. Come and see them, we rather talk than write. Send for pedigrees.

Geo. M. Conyer & Son,
Doster, Mich.

Jersey Bulls For Sale.

Sophie, Tormentor Family, straight from healthy individuals. Sired by Brookhurst S. Tormentor 163,258, Son of Sophie 19th Tormentor 113,302, and Sophia Cora 325,289, who finished among the first ten in her class on Register of Merit test 1919. Herd free from tuberculosis. Prices low. Particulars and extended pedigree furnished on request. BROOKHURST FARM, Farmington, Mich.

The Wildwood Farm

Jersey Cattle, Majesty strain. Herd on State accredited list, R. of M. testing constantly done. Bulls for sale. ALVIN BALDEN, Phone 143-5, Capac, Mich.

BUTTER BRED JERSEY BULLS FOR SALE
CRYSTAL SPRING STOCK FARM,
Silver Creek, Allegan County, Michigan.

Jersey bull calves of Majesty breeding from For Sale good producing stock. Herd on Government "Accredited List." Write for price and pedigree to C. A. TAGGETT, R. 2, Fairgrove, Mich.

LILLIE Farmstead Jerseys—A few heifers bred to L. freshen soon, heifers bred to freshen next fall, 3 cows, R. of M. bull calves. C. C. Lillie, Coopersville, Mich.

Jerseys For Sale, Register of Merit stock of both sex. Smith and Parker, Howell, Michigan.

For Sale. Jersey bull ready for service sired by Flying Fox's Gay Lad. Dam record 472.5 lbs. butter 8675 lbs. milk. Notten Farm, Grass Lake, Mich.

BIDWELL SHORTHORNS

You Can Buy

a bull that will put weights on your dairy calves—the difference will soon pay for the bull. Now selling good Scotch and Scotch-topped yearlings, reasonably priced. A roan, senior yearling, a Missie of Villager breeding, a herd bull prospect, Federal Test.

BIDWELL STOCK FARM,
Box D, Tecumseh, Michigan

We Now Have

a number of choicely bred scotch females of any age for sale also three bulls from 6 to 18 months old. Visit our herd before buying.
NORMAN CARR, Bad Axe, Mich.

Richland Stock Farms

Home of the Michigan Champions.
Shorthorn Sires in Service:

IMP. Lorne, IMP. Newton Champion, Sterling Supreme. Why not buy a young bull to head your herd that carries the blood that is making Shorthorn History. Only a few real headers left. Write your wants.

C. H. PRESCOTT & SONS, Tawas City, Mich.

Shorthorns New list 39 bulls, 49 females. Central Mich. Shorthorn Assn. write OSCAR SKINNER, Sec., Gowen, Mich.

Shorthorns Scotch and Scotch Topped bulls and heifers priced right. Sultan Champion heads herd, one scotch two yr. old herd bull by Red Cumberland priced right. H. J. FLOWER & SON, Milo, Mich.

Milking SHORTHORNS. Clay bred bull calves Herds under Federal Supervision. Davidson & Hall, Besand & Beland, Tecumseh, Mich.

Shorthorns Good Scotch bred bulls, cows and heifers priced right. W. B. McQUILLAN, R. 7, Howell, Mich.

MEADOW Hills Shorthorns. Herd headed by Silver King, full brother of Lavender Sultan Purdue University's great sire. For sale females of all ages, a few young bulls. Geo. D. Doster, Doster, Mich.

Milking Shorthorns of best Bates breeding, bulls 6 to 8 mo. old for sale. E. H. KURTZ, Mason, Mich.

Shorthorn Bulls Eight to ten months old of Scotch and Scotch Topped breeding. Lawrence P. Otto, Charlotte, Mich.

Shorthorn bull registered age 18 mos. Red, little white. Kind, peaceable and an exceptionally good individual. Write or come and see him. Roy W. Weinberg, Vicksburg, Mich. Bell phone 188F4.

Twenty-one Head of Registered Shorthorn cattle for sale. B. C. WHITAKER, Chelsea, Michigan. Bell Phone.

Reg. Red Polled cattle choice young bulls from 6 to 18 mo. old for sale. FRANK KEHLER, R. 1, Grand Ledge, Mich.

HOGS

Berkshires size with quality is our specialty. Write your wants to M. G. MOSHER & SONS, Osseo, Mich.

Registered Berkshires, Gilts, and Sows bred for April May and June farrow. A yearling Boar and a few younger Spring pigs. Chase Stock Farm, Marlette, Mich.



Spring pigs by Walt's Orion, First Sr. Yearling Detroit, Jackson, Gd. Rapids and Saginaw 1919
Phillips Bros, Riga, Mich.

CLUNY STOCK FARM

A Semi-Official Bred Bull to Head Your Herd

Maplecrest Application Pontiac No. 132652, heads

Our Herd His dam's record is 1344.3 lbs. butter 23,421.2 lbs. milk in 365 days, and 35,103 lbs. butter and 515'6 lbs. milk in 7 days.

One of his sons from our good record dams will carry these great blood lines into Your Herd.

For Pedigrees and Prices write to R. Bruce McPherson, Howell, Mich.

The Traverse Herd

We have what you want in BULL CALVES, the large, fine growthy type, guaranteed right in every way. They are from high producing A. R. O. ancestors. Dam's records up to 30 lbs. Write for pedigrees and quotations, stating about age desired.

TRAVERSE CITY STATE HOSPITAL
Traverse City, Mich.

Holsteins of Quality

Fifteen High Grade Holstein Cows For Sale
E. A. HARDY, Rochester, Mich.

Increase the Efficiency

of your DAIRY HERD

by using a Registered Holstein Sire

We have bulls of all ages listed at reasonable prices.

Also grade and pure-bred cows and heifers.

Michigan Holstein-Friesian Asso.

Old State Block,
Lansing, Mich.

Registered Holstein cows and heifers due to freshen R. this fall. Some bred to a 42 lb. bull. Price \$200 to \$400 each. B. B. REAVEY, Akron, Mich.

Entire Herd of 10 Reg. Holsteins for \$2500. 7 cows, 2 heifers, 1 bull. GEO. B. PARDEE, Gallen, Mich.

HEREFORDS

20 Cows and Heifers of popular breeding for sale also bulls not related.

ALLEN BROS.

PAW PAW, MICHIGAN

Herefords. Just purchased 3 new herds, now have 150 head; we offer you anything desired either sex, horned or polled, any age. Priced reasonable. THE MCCARTYS, Bad Axe, Mich.

CREDITABLE DAIRY STORIES.

(Continued from page 120.)

production, and economy of production will eventually help the consumers, then isn't Congress justified in spending money in the study of this problem?

At the present time the funds appropriated by the government for this dairy cattle breeding project amounts to \$8,000. Imagine a corporation with over two billion dollars invested in its machinery limiting its appropriation for promoting greater efficiency in production to this small sum. It is entirely too small for the work. In explaining the work and its scope, Dr. Charles W. Larson, of the Dairy Division, says they do not want phenomenal animals, but must have good foundation stock. Funds are needed to buy certain animals possessing requirements essential to making the experiments. It is also necessary to keep the daughters of these animals to see what they do, and they must be kept on the government farm to have uniform management. This means that the herd will grow, that it will be necessary to add new buildings, and purchase larger quantities of feed.

Many persons do not understand why the test farm isn't self-supporting. Mr. Larson says if they were permitted to sell their products in the market they could show a profit, not including the investigations. They have furnished to the colleges bulls that would readily sell for \$4,000 to \$5,000. The milk goes to the laboratories, and in experimental work with dairy products, and all returns from sales are turned back into the United States Treasury. An appropriation of \$32,000 was made for an experiment farm in Louisiana, last year, and it returned to the treasury from sales \$22,000. The Beltsville farm would show a profit if they were permitted to sell the milk and surplus animals, in spite of the fact that animals are kept in the in-breeding experiments which would be discarded by the practical dairyman.

While on a visit to the Beltsville farm, I found in the large herd of Holsteins, Guernseys and Jerseys several animals of exceptionally high type and production. Among the number was the Holstein cow, Calamity Wayne Pauline 2nd, the champion butter cow of Maryland, with a record of 22,547 pounds of milk and 855 pounds butter fat. Duchess Calamity Wayne is a fine young cow, milking 55 pounds with first calf. Four daughters of Piebe Laura Ollie Homstead King, a famous Minnesota Holstein sire, one of them Mercedes Laura Ollie, with a record of 20,000 pounds milk, 625 pounds fat, are in this herd. Little Gladis of Hillside, daughter of Hillside Torono, a Hood Farm Jersey sire, is one of four daughters of this bull at Beltsville, making a fine record. There are several herd bulls of excellent quality, and sires of high producing cows. The herd is under the able management of H. T. Converse, formerly of New Hampshire.

In addition to the investigations already mentioned, comparative tests are being made in milking three and four times a day, in methods of stabling, stanchions against box stalls, and in calf feeding for the purpose of securing a home-made substitute for whole milk to replace the whole milk without the use of commercial calf feeds. The Beltsville Farm specialists hope to be able to give out some definite results of these experiments at an early date.

E. E. R.



Good Feed With Good Cows Always Pays

Your cows give three or four pounds of milk per pound of grain fed, if they have the right milk-producing temperament and are properly fed a good **BUFFALO CORN GLUTEN FEED** grain ration and good roughage.

The good dairyman—who has no use for the scrub cow, much less the scrub bull—gets 300 to 400 pounds of milk for every 100 pounds of the **BUFFALO CORN GLUTEN FEED** mixture that he gives his milking herd in addition to the pasture.

Where the summer and early fall milk prices have been settled, it has been on the basis of an ascending scale for July, August and September—the September price being the highest ever paid for September milk. It is reasonably certain that this rise toward higher milk prices will be the rule in all the principal milk markets. Figure out your profit over the cost of your grain feed, on this basis.

If you buy your July, August and September requirements now, your **BUFFALO CORN GLUTEN FEED** will cost you no more than that which you used to make your June milk; and you are thereby assured, as far as **BUFFALO CORN GLUTEN FEED** is concerned, that the entire rise in the milk price will be additional profit. **Feed BUFFALO CORN GLUTEN FEED, summer as well as winter.**

Ask your dealer about the "SPECIAL PRICE GUARANTEE"

Corn Products Refining Co.

New York

MAKERS OF

Chicago

BUFFALO

GLUTEN FEED

Write to

National Starch Co., 606 Ford Bldg., Detroit, Mich.

45 Years on the Line

Come to Headquarters for

Cotton Seed Meal

OWL

DOVE

JAY

Brand

Brand

Brand

F. W. Brode & Co.

Established 1875.

Incorporated 1915.

MEMPHIS, TENN.

Our Brand on the Tag Means Quality in the Bag

MICHIGANA FARM

Sells Quality Durocs

Friday August 6th

Bred sows, boars and open gilts. All immunized. Now is the time to start with pure bred when hog market is bad and few are investing. Sell grades and buy good pure bred at a low initial cost in this our first public sale. Pavilion is in Kalamazoo County on main line of Grand Trunk R. R. at junction of Kalamazoo branch. All are invited.

Write for catalogue.

O. F. Foster, Mgr., Pavilion, Mich.

Duroc sows and gilts bred to Walts King 29499, who has sired more 1st and 2nd prize pigs at the State Fair in last 2 years than any other Duroc boar. Everyone will be a money maker for the buyer. Cat. and price list. NEWTON BARNHART, St. Johns, Mich.

Thos. Underhill & Son,

Salem, Mich. Breeders of Reg. Duroc Jersey swine. Watch for our sale adv. in Mich. Farmer, July 24 issue, of bred sows, bred gilts, open gilts and boars.

OAKWOOD FARM DUROCS

We can furnish you with anything from a weanling pig to a boar of herd heading caliber at reasonable prices. Your inspection and correspondence is solicited. RUSH BROS., Romeo, Mich.

12 Choice Duroc gilts bred to farrow July and August. Daughters of Michigan Cherry Col. bred to Jacks Cherry Orion King Number 18258. Son of the \$10,000 champion Jacks Orion King 2nd. All large type, heavy bone gilts, 250 to 300 lbs. THE JENNINGS FARMS, R. 1, Bailey, Mich.

DUROC JERSEYS

E. D. HEYDENBERG, Wayland, Mich.

Am Selling Durocs August 4th. Send for catalog.

W. C. TAYLOR, Milan, Mich.

Duroc Jersey fall and spring pigs for sale. We sell you only the best, ship C. O. D. subject to your approval. Register in buyers name and guarantee satisfaction. W. E. BARTLEY, Alma, Michigan

CHESTERS two good fall gilts bred to a boar of Wildwood Prince Jr. breeding for Sept. farrow; spring pigs F. W. ALEXANDER, Vassar, Mich.

The World's Champion

big type O.I.C's. Stock of all ages for sale. Herd headed by Calloway Edd, the World's Champion O. I. C. boar assisted by C. C. Schoolmaster. Grand Champion boar of Michigan, New York and Tennessee state fairs. Also, C. C. Giant Buster, undefeated Senior boar pig wherever shown and Grand Champion of Oklahoma state fair. Get our catalogue of Crandell's prize hogs, Cass City, Mich.



I HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from my great herd in every community where I am not already represented by these fine early developers—ready for market at six months old. Write for my plan—'More Money from Hogs.' S. S. BENJAMIN, E. F. D. 10, Portland, Michigan

Central Mich. O. I. C. Swine Breeders Ass'n.

Hogs of all ages of popular blood lines. Every sale guaranteed by association.

DR. H. W. NOBLES, Sales Mgr. Coral, Mich.

O. I. C's. One Sept. boar. March farrowed pigs of either sex. O. J. THOMPSON, Rockford, Mich.

O. I. C. & Chester White Swine Strictly big type with QUALITY. Spring pigs own ready to ship. Never had better ones. Remember I was breeding Big Type 20 years ago. They have a right to be big. Write us for prices. NEWMAN'S STOCK FARM, R. 1, Marlette, Mich.

O. I. C's A few choice late fall and winter boars, also a fine two year old boar. WEBER BROS., R. No. 2, Royal Oak, Mich.

O. I. C. Gilts bred for July and Aug. farrow. Also spring farrowed pigs. G. P. ANDREWS, Dansville, Mich.

O. I. C. Gilts bred for Sept. farrow and spring pigs. F. C. BURGESS, R. 3, Mason, Mich.

O. I. C's Eight young boars and spring pigs for June shipment. CLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C's Booking orders for spring pigs, we register free and ship C. O. D. A. J. BARKER & SON, Belmont, Mich.

O. I. C's 5 last fall boars and 15 last fall gilts bred for fall farrow. Weight 230 to 250 lbs. extra good stock. Also this spring pigs not akin. 1/2 mile west of depot. Citizens phone 124. Otto B. Schulze, Nashville, Mich.

MILLER Meadow's L. T. P. C. boars all sold. Gilts sired by General Jones and bred to our young boar Alaska, address CLYDE WEAVER, Ceresco, Mich.

FOR SALE Registered Big type Poland China gilts bred for Sept. farrow, weighing 25 lbs. for \$60, spring pigs all sold, guarantee satisfaction. DORUS HOVER, Akron, Mich.

L. S. P. C.

One 400 lb. sow and 7 pigs by side, price \$100.00. One 275 lb. gilt and 6 pigs by side, price \$85.00. Two choice boars. H. O. SWARTZ, Schoolcraft, Mich.

Big Type Poland Chinas

Our herd is representative of the best in Big Type. The \$40,000.00 "The Yankee", the \$30,000.00 "The Clansman" and the priceless "Giant Buster" are all represented. We aim to keep up-to-date blood lines and only quality stuff. Boars for sale now. PUBLIC SALE OCT. 28th. WESLEY HILE, R. 6, Ionia, Mich.

L. T. P. C. We have a large number of spring and summer pigs ready to ship sired such boars as "Hart's Black Price", "Leonard Big Bob", the "Model Clansman" and "Prospect Yank" a great son of the \$40,000 Yankee. Write for prices or come and look them over if you are in the market. HART, FULCHER & CLINE, address F. T. Hart, St. Louis, Mich.

Bred Sow Sale at Fairgrounds

August 5th. Carey U. Edmonds, Hastings, Mich.

Big Type P. C. Bred gilts. Fall yearlings, prize winners, over 1100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

BOARS! Oh Boys!

Sons and grandsons of the Mighty Giant Buster. The big boned useful kind. Priced for a quick sale. JNO. C. BUTLER, Bell Phone, Portland, Mich.

Big Bob Mastodon pig takes the cake, book your order now. Fall boars and gilts sired by a grandson of Disher Giant, open or bred to Big Bob for Sept. 23 yearling sons. O. E. GARNANT, Eaton Rapids, Mich.

Big Type Poland Chinas with quality, at reasonable prices. Pigs of both sex, and bred sows and gilts. G. A. BAUMGARDNER, R. 2, Middleville, Mich.

Big Type Poland all sold out. Watch this ad for further announcements. Breeding stock for sale in season. L. L. CHAMBERLAIN, Marcellus, Mich.

LEONARD'S B. T. P. C. bred sows all sold. Order booked for boar pigs at weaning time from Mich. Champion Herd. E. R. Leonard, R. 3, St. Louis, Mich.

I am offering Large Type Poland China Sows, bred to F's Orange, at reasonable prices; also fall pigs. Write or call Clyde Fisher, St. Louis, Mich. R.R. 3.

"Lindhurst" Poland Chinas

Mammoth Ben's Chief No. 352157 heads our herd. Sows by Mammoth Ben, Upsome Lad, Joe Mastodon, Gertsdale Jones, and Capt. Price. Pigs by Mammoth Ben's Chief, Mountain Jack, and Orange Model. For sale fall boars and gilts sired by a son of Bower's Mammoth Joe. A few herd sows priced to sell. Get in line for spring boars. WM. H. LIND, City Phone, Alto, Mich.

6th ANNUAL P. C. Bred Sow Sale March 1921. For particulars write Augustus, Mich. W. J. HAGELSHAW.

LARGE TYPE P. C. SWINE. One yearling boar, one fall yearling boar, fall pigs, a few more bred sows. R. W. Mills, Saline, Mich.

Poland China Brood Sows Bred for May and June farrow, \$50.00. Maplewood Stock Farm, Allegan, Mich.

HAMPSHIRE

1914 - - - - - 1920

Choice Spring boars, popular breeding. Booking orders for fall pigs. All stock Cholera Immuned and guaranteed Breeders. Satisfaction guaranteed.

STEBEN'S HAMPSHIRE FARM R. 3, Angola, Ind.

Edgewood Hampshires

All bred gilts sold. Now booking orders for gilts bred for fall farrow, and pigs for pig club work only. Depew Head, Edgewood Farm, Marion, Ohio.

Large Type Poland Chinas nothing for sale at present. Spring pigs doing fine. A. A. FELDKAMP, R. 2, Manchester, Mich.

BACON The highest priced pork product. Yorkshires are ideal bacon hogs. For sale, spring pigs, both sexes. WATERMAN & WATERMAN, Packard Rd., Ann Arbor, Mich.

Hampshires get your boar pigs, now a few bred gilts left new blood lines of quality. JOHN W. SYNDER, R. 4, St. Johns, Mich.

HORSES

BAY MARE

For Sale, sound and right in every way, weight about 950 lbs. Must be sold at once come and see her or write L. J. Hamlin, 496 Hurbit Ave., Detroit, Mich.

Percher n Stallions and mares at reasonable prices; inspection invited. F. L. KING & SON, Charlotte, Mich.

SHEEP.

KIDS

I cannot sell you any more ewes until next fall. To some grown up, I can offer 10 very good young Shropshire ewes that will lamb in April for \$400.00. Their lambs contracted to me should not more than purchase price next fall. Also 10 mighty nice ewe lambs for \$350.00. Come and see them. S. L. WING, KOPE-KON FARMS, Coldwater, Mich.

Idle Wild Stock Farms Shropshire yearling rams from prize winning stock. Make your selection early. Cliff Middleton, Proprietor, Clayton, Mich. R. 3.

Want a Sheep? Let American Hampshire Sheep Association send you dandy booklet with list of breeders. Write COMFORT A. TYLER, 23 Woodland Ave., Detroit, Mich.

Cotswolds yearling rams, ram lambs, Cotswolds ewes all ages sired by Oana. A. M. BORTEL, Britton, Mich.

Latest Market Reports

SECOND EDITION

The market reports in this edition were revised and corrected on Wednesday afternoon, July 28.

WHEAT

Prices are falling with extraordinary swiftness. Mills are not buying owing to the light demand for flour. Present quotations on the local market are:

Cash No. 1 red\$2.80
Cash No. 1 white 2.78
Cash No. 1 mixed 2.78

CORN

Corn prices are finding lower levels and there is not much evidence of a return of strength. On the local market quotations are:

Cash No. 2 mixed\$1.55
Cash No. 2 yellow 1.60

OATS

Oat prices are on the down grade and there is no indication of an immediate recovery. On the local market quotations are:

Cash No. 2 white90
Cash No. 3 white89
Cash No. 4 white88

RYE

Buyers are inactive and Cash No. 2 rye is quoted at \$1.95 per bushel on the local market.

BEANS

There is not much doing in the bean deal and prices are easy at \$6.90 per cwt. for choice hand-picked pea beans.

SEEDS

The market is inactive and prices have not changed. At Detroit prime red clover is quoted at \$24.25; alsike \$23.50; timothy \$5.50 per bushel.

FEEDS

Prices have declined slightly during the week on the local market. Present quotations are: Bran \$56@57; standard middlings \$59@60; fine middlings \$60@62; coarse corn meal \$70@71; cracked corn \$75@76; chop \$68@70 per ton in 100-lb. sacks.

HAY

Prices are firm in some of the outside markets, but the tone of the local market is easy at the following values: No. 1 timothy \$36@37; standard \$35@36; light mixed \$35@36; No. 2 timothy \$34@35; No. 3 timothy \$31@33; No. 1 mixed \$32@34; No. 1 clover \$32@33; rye straw \$13.50@14; wheat and oat straw \$13.50@14 per ton in carlots.

BUTTER

Butter prices are steady and the demand and supply are well balanced. On the local market prices are 52@52½c for creamery extras and 54@56c per pound for one-pound prints.

EGGS

The demand is taking care of the available offerings at 43½@44c for fresh candled stock and 46c per dozen for storage packed extras.

POULTRY

The demand is active for hens and broilers of good quality. On the local market quotations for live poultry are: Broilers 50@55c; Leghorn broilers 40@44c; hens 37@38c; small hens 34@36c; roosters 20@22c; geese 18@20c; ducks 36@40c; turkeys 40@45c per pound.

WOOL

It is now so long since the markets broke that some confidence should be taken from the very fact that panicky conditions have not arrived. There has never been such a market as the present one, but confidence is held that a change for the better will come, for the conditions are not likely to get any worse so long as the bulk of the clip is not rushed on the market.

GRAND RAPIDS

The first of the new wheat crop was marketed this week, testing 62 pounds to the bushel. The opening price was \$2.40 for No. 1 red and \$2.38 for No. 1 white. The Red Rock grown in Grand River Valley contains a greater amount of gluten than that raised in Red River Valley. New rye was brought to market this week, selling at \$1.60 per bushel. The crop in western Michigan is an excellent one in quantity and quality. Growers began marketing their crop of early potatoes this week and the opening price was \$5.50 per bushel. Over 5,000 bushels were sold on the City Market during the week. Prices declined at the week end to \$2.50@2.25. First picking of peaches was made this week, selling at \$5 per bushel. The crop in western

Michigan is an average one in a few localities, but on the whole is light. The hay crop is near fifty per cent above that cut last season. The bean crop never looked better than at the present, according to reports made to elevators. The acreage in this section is about 20 per cent less than last year. There has been a large marketing of poultry during the week, especially broilers. Dealers pay growers 28@35c per pound alive, according to weight.

NEW YORK PRODUCE MARKET.

Butter.—The outstanding feature of the butter market this week is the absorption of the 44,392 casks of Danish butter and the 10,854 casks of Holland butter, which arrived one week ago, but which has been unloaded throughout the week. Trading has been fairly active at times during the week but it has been less spontaneous than during the last few weeks. It is fully expected that further price declines may develop during the next few days but without doubt the market will recover as soon as the foreign butter has all been absorbed. Quotations today are as follows: Extras 56c; higher scoring than extras 56½@57c; firsts (90-91 score) 54@55½c; firsts (88-89 score) 52@53½c; seconds 49@51c.

Eggs.—The tendency of the market has been to strengthen and prices have advanced slightly. Warehouse reports show that holdings have not increased any during the week; in fact, there has been a slight decrease. Quotations are: Firsts 47@50c; extra firsts 51@53c; extras 54@55c.

Poultry.—The receipts of poultry have been fairly heavy during the week, but demand has been cut because Orthodox Hebrews have abstained from eating any meat during the week. As a result prices have declined somewhat. Established quotations are: Fowls 36c; broilers 44@50c; old roosters 23c; turkeys 35c; ducks 25c; geese 22@25c.

COMING LIVE STOCK SALES.

Durocs—August 6, Michigana Farm, Pavilion, Michigan.
Jersey—August 10, Bloss Bros., Swartz Creek, Michigan.
Duroc Jersey—August 10th, Home Farm, Thos. Underhill & Son, Salem, Mich.
Poland-Chinas, Oct. 26, Wesley Hile, Ionia.
Big Type Poland-China Sale Circuit in Central Michigan, October 26-30.

GRASSHOPPER OUTBREAK.

(Continued from page 116).

made it impossible to get enough to go around, and even when a few carloads could be found, the freight service was so uncertain that long delays resulted.

The State and County Farm Bureau organizations spent considerable effort in locating and arranging for supplies of arsenic and of molasses. Aid was also given by Mr. James Bice of the Public Utilities Commission. As a result of all these efforts a number of carloads were gotten into the most heavily infested districts in the north but the supply was inadequate in spite of all that could be done.

Now, in regard to next year's prospects—it seems likely that certain parts, here and there at least, will witness an improvement in the situation. This hope is based on the appearance,

in numbers, of the ash-gray blister beetle, and the black blister beetle in the districts longest invaded. These blister beetles feed during adolescence on the eggs of grasshoppers, each beetle requiring from twenty to thirty eggs for its development. The adult beetles feed on all sorts of crops but prefer legumes. In past years, the appearance of the beetles has usually marked the beginning of a decline in the outbreak. The larvae of a harvest-mite also furnish some lesser aid. These mites appear as red kernels attached to the grasshoppers usually at the bases of the wings. They do not kill their hosts outright but sap their vitality somewhat.

The writer does not expect a very marked cessation of the trouble in 1921, at any rate not a general abatement, but certain areas not determinable at this time, will probably be marked by fewer grasshoppers. Wet weather is also unfavorable to the hoppers. The present outlook seems to promise a continuance of the trouble which should induce the county boards of Supervisors to arrange for adequate supplies of white arsenic during the winter when the price is at its lowest point, and furthermore it would seem that the State would be justified in enacting certain legislation looking to the destruction of grasshoppers on wild land, both that held by the public, and by private owners.

White arsenic is, of course, not suitable for ordinary spraying operations without further preparation but when combined with sal-soda and later with lime it can be used for spraying potatoes. This mixture, known as Kedzie mixture, is the cheapest, safe, quick-acting spray for potatoes known—a spray that was quite generally used with or without bordeaux in earlier days. This is mentioned in view of the fact that any over-supply that might be taken on as insurance against the grasshoppers could be utilized in the finest potato growing region of the United States.

R. H. PETTIT.

Professor of Entomology and Entomologist of Experiment Station.

Live Stock Market Service

DETROIT

Receipts 1,049. Market steady.
Best handy wt bu steers 10.00@13.50
Best heavy steers\$12.50@13.00
Mixed steers and heifers 9.00@10.00
Handy light butchers.... 8.00@ 9.00
Light butchers 6.50@ 8.00
Best cows 8.50@ 9.00
Butcher cows 6.00@ 7.00
Cutters 5.00
Canners 4.50
Best heavy bulls 8.00
Bologna bulls 7.00
Stock bulls 6.00@ 6.50
Feeders 8.50@ 9.50
Stockers 6.50@ 8.50
Milkers and springers....\$ 65@ 110

Veal Calves.

Receipts 722. Market is steady to strong.
Best\$18.50@19.00
Others 10.00@17.00

Sheep and Lambs

Receipts 781. Market steady.
Best lambs\$15.00@15.50
Fair lambs 12.00@13.00
Light to common 10.00@12.00
Yearlings 6.00@10.00
Fair to good sheep..... 6.00@ 7.00
Culls 2.00@ 4.00

Hogs.

Receipts 1,791. Market steady.
Heavy hogs 15.25@15.50
Sorted hogs 15.75
Pigs 15.25
Rough 12.75@13.00
Stags 10.00

CHICAGO.

Hogs.

Estimated receipts today are 7,000. holdover 17,518. Market unevenly 10 @15c higher than yesterday's general trade. Bulk of sales at \$13.50@15.55; tops \$15.60; heavy 250 lbs up medium, good and choice \$13.80@15.20; medium 200 to 250 lbs medium, good and choice \$14.50@15.60; light 150 to 200 lbs common, medium, good and choice \$14.85@15.60; light lights 130 to 150 lbs common, medium, good and choice \$14.25 @15.45; heavy packing sows 250 lbs up smooth \$13.25@13.75; packing sows 200 lbs up rough \$12.75@13.25; pigs 130 lbs down, medium, good and choice \$13.50@15.25.

Cattle.

Estimated receipts today are 7,000. Market is steady to strong on choice steers; others slow but steady. Beef steers medium and heavy weight 1100 lbs up choice and prime \$16@17.10;

do medium and good \$12.50@16; do common \$10.50@12.50; light weight 1100 lbs down, good and choice \$15@16.75; do common and medium \$10@15; butcher cattle, heifers, common, medium, good and choice \$6.50@14.90; cows, common, medium, good and choice \$6@12.50; bulls, bologna and beef \$6.25@12.25; canners and cutters, cows and heifers \$4.25@6.25; do canner steers \$4.75@7.50; veal calves, light and handyweight, medium, good and choice \$13@17.25; feeder steers common, medium, good and choice at \$8.25@12.25; stocker steers, common, medium, good and choice at \$6.25@11; do cows and heifers, common, medium, good and choice \$5.25@8.25.

Sheep and Lambs.

Estimated receipts today are 17,000. Market slow; lambs weak to 25c lower; sheep steady. Lambs 84 lbs down medium, good, choice and prime \$12.50 @16; do culls and common \$7.50@12.50; spring lambs medium, good, choice and prime \$9@13; ewes, medium, good and choice \$6.25@8.75; ewes cull and common \$3@5; breeding ewes full mouths to yearlings \$6.50@10.50; yearling wethers, medium, good and choice \$11.50@13.25.

BUFFALO

Cattle.

Receipts ten cars; market 25c lower; prime shipping steers \$15.50@16; best shipping steers \$15@15.50; medium shipping steers \$14@14.50; best native yearlings, 950 to 1000 lbs \$16.50 @16.75; light native yearlings, good quality \$13.50@14; best handy steers \$12.50@13.50; fair to good kind \$11@12; handy steers and heifers mixed at \$12.50@13; western heifers \$11.50@12.50; state heifers \$9@10; best fat cows \$9.50@10.50; butchering cows at \$8@9; cutters \$6@6.25; canners \$4@5; fancy bulls \$8.50@9.50; butchering bulls \$8@9.50; common bulls \$6@7.50; best feeders 900 to 1000 lbs \$9@10; medium feeders \$7.50@8; stockers at \$6.50@7; light common \$5.50@6.50; best milkers and springers \$10@12.5; mediums \$50@75.

Hogs.

Receipts 30 cars; lower, heavy and mediums \$16@16.25; yorkers \$16.50@16.60; pigs and lights \$16.25@16.50.

Sheep and Lambs.

Receipts 4 cars; steady; top lambs \$15.50@16; yearlings \$11@12.50; wethers \$10@10.50; ewes \$8.50@9.

Calves.

Receipts 600; \$19.

25 Cords a Day

Easily Sawn By One Man. Easy to move from cut to cut. Make big profits cutting wood. Cheap and easy to operate.

OTTAWA LOG SAW

Does 10 men's work at one-tenth the cost. Makes work easy. Engine can also be used for running pumps and other machinery. Saw blade easily removed. Write for our low price. Cash or Easy Payments.



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SMOOTH-ON IRON CEMENT No. 7



Is a hydraulic Iron Cement. Use it in combination with Portland Cement for making hard wearing concrete surfaces. Unsurpassed for repairing concrete floors and walls making them waterproof, dust-proof and oil-proof.

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Tonic for HORSES run down or affected with Heaves

A run-down, sluggish, "heavy" horse can't do its full share of work. Tonic up his system, cure the Heaves and you have a horse worth its full value in work or in money.

Send today for Fleming's Tonic Heave Powders \$1.04—war tax paid—per pkg. Satisfaction or money back. Fleming's Vest-Pocket Veterinary Adviser helps you distinguish heaves from other ailments. Write for the Adviser. It is FREE.

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CORN HARVESTER One man, one horse, no row. Self-Gathering. Equal to a Corn Binder. Sold direct to Farmers for \$27.95. Only \$25.00 with feed or binder. Free Catalog showing pictures of Harvester. PROCESS CORN HARVESTER CO., Salina, Kansas.

Farmers' Auto Tour—By J. H. Brown

HEREWITH are the last instructions and some of the details of the "Michigan Farmer's Automobile Tour" to Mackinaw and the Soo. For the east pike the tourists should leave home on Monday forenoon, August 9, and drive to Bay City in time to reach the Board of Commerce building at 5:30 in the afternoon, fast time. The Board of Commerce has planned to entertain the east pike tourists at dinner that evening. At that time T. F. Marston will take charge of the party and issue the car pennants, badges, windshield records, which will also have space for marking the car number for the entire tour. Mr. Marston's car will be No. 1 and will also be the pilot car. We have also planned to have miniature flags attached to each corner of each car, front and rear, so the tourists' cars can be easily distinguished at some distance. This will be of advantage, especially when some other car cuts in or tries to pass the whole caravan on the road.

After dinner the east pikers will be the guests of some organization at Wenonah Beach, where everyone will have an opportunity to take the first dip in the waters of Lake Huron. Monday night camp is to be at Wenonah Beach, and breakfast will probably be secured there Tuesday morning.

The dance at East Tawas is to be the old-fashioned kind and will assuredly be an interesting feature.

The west pikers start from Battle Creek and elsewhere on Sunday, August 8, and meet at Ramona Park, Reed's Lake, Grand Rapids, in good season to camp for the night and get some grub for the department of the interior.

Early Monday morning the tourists will break camp and start for Manistee by way of Sparta, Newaygo, Fremont and Shelby. We have been informed by the city officials, chambers of commerce, boards of education and county fair associations, that the west pikers are to be entertained in fine shape at Manistee, Traverse City and Harbor Springs. At Traverse City, Roy T. Zimmerman, secretary of the Northwestern Michigan Shorthorn Breeders' Association, writes that the members have organized and will entertain us on the fair ground on Wednesday, August 11, with a fine barbecue.

At Harbor Springs we will find hundreds of friends waiting for us even before we reach the outer gate. Friday forenoon will be celebrated with another fine program at our camp on the bluff around the high school building.

And then when we arrive at Mackinaw City Friday evening, August 13, our pilots, Hugh Gray and Frank Marston, will meet in their war paint, and the doings will be on with the greatest aggregation of touring cars with sleeping outfits galore and all sorts of ways of cooking grub demonstrated to an admiring crowd.

A large number of the tourists wish to go to the Soo. So we have made arrangements and will cross the Straits on Monday, August 16, drive to the Soo, and stay about three days. We cannot take the space to enumerate the good time and the sights at that wonderful place.

Coming back, these tourists who do not go to the Soo will start on Monday and drive to Boyne City, where they will be entertained in a fine camp in the center of the city that night. The next night, Tuesday, they will camp at Cadillac. The Soo tourists will return about three days later and camp at the same places.

Returning home, those tourists who drive back by way of Howard City

will stop long enough to inspect some very interesting farm experiments in charge of D. L. Hagerman, agricultural and industrial agent of the Pennsylvania Railway.

Those tourists who go without sleeping equipment, and whom we have registered for each side of the state, should carry along one pair of sheets and a pillow for each tourist in each car. Those tourists will be furnished cots in tents, also blankets, at each camping place along the route. Tourists who have their own sleeping equipment can take care of themselves. A few have asked us to furnish an extra cot to put in their own car tents.

Before starting, see that your tires are in good shape, have at least one extra tire and inner tube, adjust brakes and bands, make sure your motor is in good tune, grease and oil everything that needs lubrication and look after the springs. Grease them well and see what a difference it makes.

Carry two heavy lap robes in each car to use on cool nights on the cots under the sheets. More cold comes from underneath than on top when one sleeps on canvas above the ground. Take along your bathing suit, extra duds that you are sure to need, and keep a supply of newspapers on hand. They are good to put on the cots under the blankets when a cold night happens along.

And now trust in Providence and keep your talcum powder dry as you start out on this the first tour of the kind that ever happened in this great and glorious country. All correspondence regarding the tour should be addressed to J. H. Brown, 118 North Division St., Battle Creek.

MARKETING CONFERENCE.

(Continued from page 114.)

formulate, and submit hereafter for consideration, a definite plan or organization whereby all organizations of grain producers can conduct cooperative grain marketing through one or more central organizations or grain exchanges, or such other solution of the cooperative marketing problem as may be approved by such committee, and that each organization or interest represented, shall bear the expenses of its own delegate or committee members. That when this committee is ready to report, copies of this report shall be sent to each organization, and the chairman of the American Farm Bureau Federation shall call a conference of accredited delegates of such organizations with power to act, to whom such plan shall be submitted for adoption or rejection.

Resolved, That this conference request every organization to report to the American Farm Bureau Federation the respective freight problems and car requirements of their respective districts; and that the federation coordinate these requirements fairly and equitably and try to secure the greatest possible relief for all organizations according to their requirements.

Resolved, That this convention extend its heartfelt congratulations to the Federal Trade Commission for its substantial accomplishments in the past, and pledge to the commission its support for the future.

Resolved, Further, that we believe that true cooperation will furnish the solution of the grain marketing problems of this country, and further that we earnestly suggest that the commission investigate the application of cooperative principles to the problems of grain marketing, and cover the same in its forthcoming report upon grain conditions in the United States; that in our opinion no report upon this subject will be complete without consideration of cooperative principles as applied to marketing.

Resolved, That we are heartily in accord with a deep-waterway project and that a copy of this resolution be sent to the Deep-waterway Association now in session in Detroit.



A Sign of Dependability



The MULE-HIDE sign on a lumber dealer's building marks him as a man who sells Asphalt Roofing and Shingles of a dependable quality—the kind that have an actual service record of:

"Not a Kick in a Million Feet"

Ask your lumber dealer; he'll gladly tell you why MULE-HIDE is the logical roofing for you to buy.

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SEED WHEAT

Selections of pure seed of Fultz and Poole varieties for starting high-grade seed crops. We have a limited quantity of very fine seeds. Booklet. Samples.

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For Best Net Results

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Detroit, Mich.

"Enough Said!"

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GEO. R. ELDRIDGE CO.
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Remember! We guarantee you satisfaction with every shipment

Eggs

We have a good demand for fancy fresh eggs and will pay you 55c per dozen, delivered Detroit, cases included for express shipments strictly new laid eggs shipped direct by farmers. This price good for week ending August 7th. 1920. AMERICAN BUTTER & CHEESE COMPANY, Detroit, Mich.

HAY Ship to The Old Reliable House
Daniel McCaffey's Sons,
623-625 Wabash Bldg., Pittsburg, Pa.

Ho San Soy Beans. Michigan grown \$10 per bush. Genuine Grimm and Montana grown Alfalfa. Seed Potatoes. Write today for special seed price list. A. H. FOSTER CO., Allegan, Mich.

Farms and Farm Lands For Sale

140 ACRES Best class, gently rolling land, fine buildings and location in Central New York State for \$12,000. Part cash balance easy. Write for full particulars.
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FOR SALE

213 acre fully equipped dairy or grain farm. Modern house, all necessary outbuildings, fenced, cherries, peaches, apples. For family use 2 miles from creamery and milk station. \$12,000 only \$2,000 in cash required. C. J. Lane Farm Agency, Inc., Burlington, N. J.

Riverside Farm with 2 Horses, 18 Cattle, Tools, Crops,

Settling affairs splendid 250-acre farm goes as real bargain; wood and timber alone should return purchase price; machine-worked fields cut 2 to 3 tons hay acre; 38-cow wire-fenced, spring-watered pasture, 3,000 cords wood, 75,000 ft. timber; apple orchard producing 255 barrels season; other fruit, 2,000 sugar maples, sugar equipment; 10 room house, maple sheds, over looks river; 24-cow basement barn, other buildings; if taken now you get pair horses, 18 cattle, 5 pigs, poultry, wagons, machinery tools, part growing crops; quick-action price only \$5200, easy terms. Details of this and equipped lake-view farm for \$12.0 page 9 Strout's Big Illustrated Catalog Farm Bargains 33 States. Copy free. STROUT FARM AGENCY, 314 BQ Ford Bldg., Detroit, Mich.

Farms in southeastern North Dakota in the Famous James River Valley. Statman county North Dakota. 20,000 acres must be sold immediately. Write for big free list. JOHN B. FRICK LAND COMPANY, Jamestown, North Dakota

For Sale 400 acres, Saginaw Co. all cultivated, good buildings, excellent roads, first class drainage, railroad siding with switch, all clay subsoil with black loam, \$45000, \$15000 down balance on or before 10 years, interest 6%. D. H. RENNIE, 325 1/2 Genesee Ave., Saginaw, Bell 3531, Valley 630 B.

80 A. FARM all improved large orchard, city 1 mile to high school, on state road, care of Michigan Farmer, Detroit, Mich. Box A-171.

Rent Farm with milk route paying nearly \$300 a month net quickly 1 1/2 mile from town. Address Box 105, Chelsea, Mich.

Ex-Soldier wants to rent or buy a good general farm with small down payment. Address H. E. ADAMS, 356 Theodore St., Detroit, Mich.

POULTRY

LAYBILT S. C. W. LEGHORNS

large, great layers, pure white. Strong, Day-Old Chicks. Hatch every week. Guaranteed delivery, full count, alive and lively July chicks \$15.00 per 100. Parcel postpaid. V. A. MORSE, IONIA, MICHIGAN

LOOK! BABY CHICKS \$14 A 100 UP!

By insured parcel post, postage paid. 49 breeds chicks. 4 breeds ducks. Get June and July chicks for January layers. Catalog free, stamps appreciated. NABOB HATCHERIES, GAMBIER, OHIO

Pullets and cockerels. From thorough-bred Brown I. White Leghorns the type that are bound to make good producers. Raised on free range. Every bird guaranteed and shipped on approval. Send for prices and catalog. Breeder: Poultry Farm, Holland, Mich.

R. C. Brown Leghorn Ck'r's

\$1.00 each. White Pekin ducks \$2.00 each. Mrs. Claude Bette, Hillsdale, Mich.

Silver Laced Golden and White Wyandottes from 5 best quality only \$1.75 per 15, \$3.25 per 30 by prepaid parcels post. C. W. Browning, R. 2, Portland, Mich.

S. C. Brown Leghorns Excellent layers. Farm range. Eggs postpaid 8c each. Cockerels \$2.25 each. Floyd Robertson, R. 1, Lexington, Ind.

White Plymouth Rock Cockerels, now \$2.00 each, will be \$5.00 and up later. Richard M. Grotton, Brockport Farm, Mason, Mich.

CONDITIONS IN THE HOG TRADE.

APPARENTLY, there is nothing in the present situation which is otherwise than encouraging for owners of healthy, thrifty young hogs, and obviously this is realized by most owners, as the receipts fall off materially after every considerable decline in prices. That the last crop of hogs was an extremely short one is well indicated by the great falling off in the movement to market, the combined receipts in the seven leading western packing points for the year to date amounting to only 14,004,000 hogs, comparing with 16,112,000 for the corresponding period last year, and 14,819,000 two years ago. Hogs may look low in prices when it is recalled that sales were made a year ago at \$19.50 to \$22.50 per 100 pounds, but turning back to 1915 it is seen that prices ruled at \$6.50 to \$7.50. Because of the marked increase in the proportion of heavy grassy sows, the spread in prices has become extremely wide, with prime light butcher hogs selling the highest and bringing about 45 cents more than the best heavy butchers.

The unusually liberal purchases made in the Chicago market by eastern shippers greatly assist in the making of high prices, and the large domestic consumption of fresh and cured hog products is another bullish factor in the market all the time. Provisions are still selling much higher than in years before the late war with Germany, but large declines have taken place in recent months, and within a short time sales have been made of pork as low as \$26.60 a barrel, comparing with \$54.40 a year ago, and there have been similar reductions in prices for lard and short ribs on the Chicago Board of Trade. The foreign demand has increased materially in recent months, but exports vary a good deal from week to week. During a recent week North American exports included 10,472,000 pounds of lard, comparing with 8,302,000 pounds a week earlier and with 11,119,000 pounds for the corresponding week last year. During the same week the exports of cured hog meats aggregated 9,700,000 pounds, comparing with 24,609,000 pounds a week earlier and with 44,440,000 pounds a year ago.

THE CATTLE INDUSTRY.

EXTREMELY few fat heavy cattle suffice to meet the requirements of the Chicago market at this time, the demand running mainly on fat light cattle, especially yearlings, which sell at the highest prices. There has been a much smaller marketing of cattle in recent days than a year ago, and grass lots have comprised a large percentage of the daily offerings, these selling slowly as a general rule. Present prices are much higher than before the war, but much lower than in recent years. Recent sales of beef steers were made at a range of \$10.50 to \$17, aside from a few inferior little canning steers, while one year ago steers sold at \$18.15 for the best, two years ago at \$18.30, three years ago at \$14.05, four years ago at \$10.90, five years ago at \$10.35, and twelve years ago at \$7.85. Of course, in making these comparisons it should be remembered that corn sells at far higher prices than in former years, while farm labor has advanced enormously everywhere. Killers usually want good cows and heifers that will make moderate priced beef, but they are slow in buying ordinary steers. Lightweight veal calves are good sellers nearly all the time.

Ordinary tar remover, used by motorists to clean up their machines after a trip over newly tarred roads, is one of the best things obtainable for taking ordinary house paint off glass.



Feed Your Wheat!

The wheat plant is the tiniest, tenderest and most delicate of all the cultivated cereals, yet it produces the bread of the civilized nations.

And the men who live on good, white wheat-bread and butter are the men who lead the world.

Wheat prices are on the jump and in our opinion will bring the highest figures ever known at next year's harvest.

You can make the bushels that pay the extra profit and get the grade that commands the top price by using the fertilizer that bears the official stamp of FEDERAL QUALITY, guaranteeing in every complete formula the largest amount of:

Readily Available Phosphorus

The Grain Making Material

Graduated Nitrogen

To Feed the Plant from Seed-time to Harvest

Soluble Organic Potash

From Ground Burley Tobacco Stems

Federal Fertilizer picks up the lost motion occasioned by lack of labor, unfavorable weather and late seeding to miss the fly.

Federal Fertilizer grows long, strong wheat roots to withstand the freeze and thaw of winter. It makes heavy wheat blades to protect the plant from injury and keeps it strong and vigorous to the time of harvest.

Federal Fertilizer grows plump, heavy berries in the place of shriveled grain. It makes the wheat stool out. "Every added tiller makes an extra head of grain."

Feed your wheat Federal Fertilizer to make the grass and clover grow. Rotate your fields from grain to grass crops to make humus in the soil. A set of grass and clover after fertilized wheat will more than pay for all fertilizer used.

There is a wheat and clover formula to suit your soil and a nearby Federal dealer who will supply your needs. Failing to find him, write us describing the character of your soil, whether clay, sand land or loam and we will give you the benefit of our thirty-five years experience in making fertilizer that has always given results in the field.

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More
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Like Some Men, These
Shoes Make Good, Always

Everywhere you find Hirth-Krause shoes registering new records for wear-and-comfort.

Made from leather tanned and scientifically prepared in a Hirth-Krause Tannery. Knowing in this way the quality and uniformity of the material the shoes are made from, enables us to assure the perfection claimed in the "more miles per dollar, more smiles per miles." guarantee.

You don't know how good a shoe can be until you say "Hirth-Krause Rouge Rex, more milage shoe" to your dealer.

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A rebuilt, double-tread, chain stitched tire that has twice as much fabric as an ordinary tire—and asks for twice as much work. Behind them stands, not only a long record of hard work well done, but the guarantee of this company.

The following are the little prices of our guaranteed tires:

Size	Non-Skid	Price	Size	Non-Skid	Price
30x3	\$7.00	34x4	1-2	\$11.50
30x3 1-2	8.50	34x4 1-2	13.50
32x3 1-2	9.90	36x4 1-2	14.00
32x4	11.50	36x4 1-2	14.50

2 percent off for cash with order, 10 percent deposit required with all O. O. D. orders.

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837 No. Broad St., Dept. A, Phila., Pa.

Send for descriptive booklet and price list. Good Territory Open for Live Agents.

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Eliminate high priced coal and saw WOOD with a Wade Portable Gasoline Drag Saw. S. N. CASTLE AND CO., State distributors, Constantine, Mich.

BUY FENCE POSTS direct from forest. Prices delivered your station. M. M. care of Michigan Farmer