

MICHIGAN FARMER

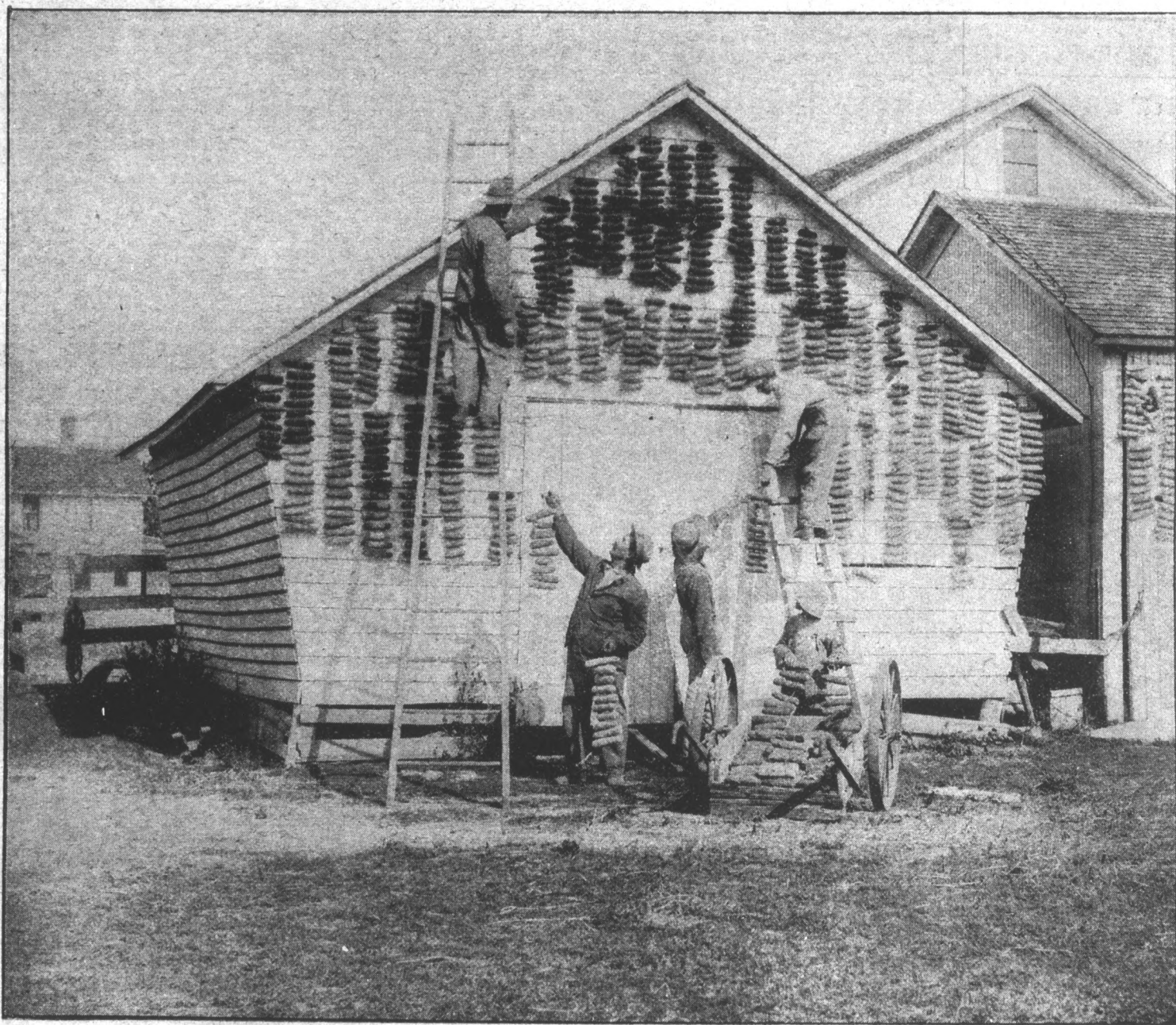
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Relation of Climate to the Corn Crop

IN nearly every corn variety test the highest yields were obtained from seed grown in the same latitude as that in which the experiment was conducted. In a few instances, during extremely long growing seasons, southern-grown seed gave a slightly higher yield.

In growing corn for the silo the weight of both stalk and ear is frequently greater in the crop grown from southern seed, but the proportion of ear to stalk is invariably higher in the corn grown from the acclimated seed. The quality of the silage is nearly always superior when home-grown seed is planted.

In a thorough test of twenty-two varieties of corn conducted

by farmers cooperating in various parts of Nebraska, Iowa, Illinois, Indiana and Minnesota not one of the foreign varieties took first, or even second place in the average results. This does not mean that the varieties from other states were inferior. They were simply not adapted to the climatic conditions of the localities to which they were transported.

The lesson to be learned from this is that seed should be home-grown, and grown not only in the same state but in the same locality. Seed grown in southern Michigan will not do so well in central Michigan as the local varieties and vice versa. There should be careful growers of seed corn in every county.



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DETROIT, MARCH 19, 1921

CURRENT COMMENT

The State's Financial Problem

THAT the high cost of doing business has depleted the available financial resources of the state government, and created a state financial problem akin to that at present faced by the average citizen, whatever the business in which he is engaged, is a fact which has been well known and much discussed during recent months. But the acute nature of the problem, and the drastic action which will be required to relieve the situation, are more clearly revealed in the report just released by Professor David Friday, of the University of Michigan, whose services were sought by Governor Groesbeck to make an economic analysis of the situation and suggest a feasible remedy.

Professor Friday's report shows that notwithstanding the fact that the taxes levied in the years in which the legislature met were practically trebled between the years 1909 and 1919, and were almost doubled in the last biennial period of that decade, the state government now finds itself in a situation requiring an additional income of \$6,000,000 during the present calendar year to discharge its present obligations and meet current operating expenses, without taking into consideration other pressing demands which are being made on it for extensions of the work of state departments and improvements needed by state institutions. This report shows that the total of money available for the present calendar year from state taxes and miscellaneous fees, other than automobile license fees, will be almost exactly \$20,000,000. Against this sum there will be the following demands: Unpaid claims held over from 1920, \$2,000,000; expenses of state government, including institutions, \$17,000,000; U. of M. and M. A. C. mill tax, \$3,000,000, and special appropriations required for the completion of buildings now in progress, \$3,140,000, or a total of \$25,140,000.

This computation of the certain demands upon the state treasury does not take into consideration a balance of special appropriations for construction projects not yet started, amounting to \$4,600,000 which Prof. Friday has assumed will be wiped out by the legislature, nor the one-half mill tax for highway purposes which will become available July 1, amounting to \$2,500,000. Since there will be no money in the general fund the report states that it seems unwise to allow

this money to become available for the highway department, the financial arrangements for which must be reorganized if it is to do any new construction work, or even complete the work which is now in progress.

The report points out that in this situation the only remedy for the emergency which confronts the state is to find a new source of revenue which will yield \$6,000,000, and which can be legally levied at once; a tax so simple of administration and easy of computation that the returns, accompanied by the payment of the tax, can be made not later than July, 1921. To meet these requirements, the report states that the most feasible plan seems to be a franchise tax on corporations, both domestic and foreign, for the privilege of doing business as a corporation in Michigan.

As for the highway department the report calls attention to the fact that it has at present funds to its credit sufficient only for current operation and maintenance. Its funds for meeting even its obligations on construction now in progress are exhausted. As a means of meeting this emergency and pushing the construction campaign already planned the report recommends that the legislature provide for the issuing of \$10,000,000 of the bonds authorized each year for the next four years at a rate of interest which would insure their sale, which would insure the early construction of a considerable mileage of improved road, and relieve to some extent the present condition of unemployment. The report contemplates the working out of a sinking fund plan which would provide for the payment of these bonds without unduly increasing the burden of state taxes in any one year.

Briefly, the principal contributing cause of this deficit in the state treasury, into which the report goes to some length, was the general increase in wages and commodity prices subsequent to the legislative session of 1919, which was not foreseen by the legislature. From the standpoint of the permanent solution of this problem it is probable that this lack of foresight on the part of the legislators was fortunate rather than otherwise. Obviously the farms and homes of the state are already taxed to the limit of practical endurance. New sources of revenue must be found to meet the emergency and expediency and the necessities of the case will doubtless dictate the present source as indicated in this report. But his permanent solution of this vexed question will require more than the inauguration of a make-shift tax which can be largely passed on to the public through increased commodity or service prices. Many thinking citizens who have given the problem much thought believe a tax on earning power rather than on thrift is the best solution. All of the leading farmers' organizations of the state have endorsed this principle and have joined issues through their federated committee in advocating the adoption of an income tax for state purposes. The manufacturing interests of the state, which have strangely opposed this plan, may see the situation differently after contributing liberally, as they will be obliged to do if the plan embodied in this report is adopted.

Of relief by the reduction of state expenditure there is little hope. New developments will continue to create new demands for improved service and facilities—demands which history teaches us can not or will not be denied. The endurance of such an increasing burden can be made possible only by its equitable distribution among the beneficiaries, which is obviously not possible through property tax alone, if, indeed, it cannot be more fairly accomplished by substituting other forms of taxation altogether for state purposes.

Marketing Farm Products

NEW and theoretical methods of playing the grain and live stock markets now occupy a conspicuous front among the feature articles in the agricultural press. Whether, or not, this new idea of accepting the advice of market experts and professors of economics as to when to store grain and hold back cattle, sheep and hogs is going to benefit farmers or prove a "wolf in sheep's clothing" depends precisely upon the ability of these "seventh sons" to forecast accurately the trend of grain and live stock prices. It makes mighty interesting copy for the papers and seems to find popularity among certain classes of farmers. However, successful grain growers and stock farmers who have followed the "ups and downs" of the business for years believe in an orderly system of marketing, and have practiced it for years, but they also realize that there is grave danger ahead of any attempt to artificially stimulate the great markets of the country through holding farm products more than a reasonable length of time.

Knowing when to hold and when to sell is one of the chief secrets of making the farm pay. A few men succeed in selling their grain and live stock above the average prices for the year; more fail to get the average. There is always a right time to sell, if one knew when it arrived. Based upon the supply and demand of former years these market experts and professors of economics find it comparatively easy to forecast what is likely to occur in the range of prices during the year, but when they attempt to forecast the results of a system based upon holding back farm products for any considerable length of time in order to increase or maintain prices they are going to run up against a snag, for factors other than the probable demand for that one particular commodity must be given due consideration. Every system ever worked out has exceptions, and very often the exceptions are right, and the main proposition fundamentally at fault. System is needed in the marketing of farm products, but if carried too far there is danger of it intensifying the very evils it is seeking to correct.

In going over probable price forecasts for the coming few months one finds that but little consideration has been given to the probable wages of labor in the big industrial centers of the country. And yet every well-posted farmer understands that the prices he will get for his grain, live stock, fruit, vegetables, poultry, eggs and dairy products depends to a very large extent upon the pay envelopes of the city wage earner. How many market experts can accurately forecast what wages are going to be during the spring and summer?

An astonishing thing about family food budgets is the fact that when prices of some commodities reach certain levels there is a falling off in consumption and an increased demand for substitutes. The dairy industry is slowly recovering from such a condition at the present time, and any material advance in prices or falling off in wages is sure to result in decreased consumption of whole milk, cream, butter and cheese, and the wider use of substitutes which gained such a strong foothold during the period of war-time prices. Who can tell just how the family food budget is going to fare during the next few months? Experts and professors play safe by quoting ten-year history of seasonal variations in prices rather than reviewing present conditions. Therefore, there is danger of their system proving a disappointment to those who use it.

Excessive freight rates are an unknown factor in determining the future trend of prices for farm products. Cer-

tain regions are finding it impossible to conduct present systems of farming at a profit. Foreign exchange and tariff revision are other things that should be given due consideration. And yet no market expert or professor of economics can foretell with any degree of accuracy how these new factors are going to affect the movement and prices of farm products. They can give the ten-year average and tell us what may occur if such and such is the case, but the real truth of the matter is they have no precedent upon which to base their estimates. Ten-year averages may prove a safe guide, and then again they may not.

There are not a few farmers who have posted themselves thoroughly on the situation and made up their minds to go ahead with their business as usual, and arrange their marketing so as to take advantage of prices during different seasons of the year. Such a course is pretty sure to result in a more orderly system of marketing farm products, which is a step in the desired direction of stabilizing prices on an equitable basis.

News of the Week

Wednesday, March 9.

WORKMEN in Petrograd revolt against the soviet troops, as rebels under the leadership of General Kozlovski advance on the city.—Premier Dato, of Spain, is assassinated in Madrid.—The United States army of occupation will remain in German territory for the time being, according to a decision reached by President Harding's cabinet.—Reports from Germany indicate that the people of that country are calmly meeting the situation due to the break between the representatives of the allies and Germany in the reparations conference.

Thursday, March 10.

THE allied leaders issue a proclamation to Germany ordering the surrender of all arms within twelve hours, and prohibiting strikes and sabotage.—Italy is preparing plans for meeting her obligations to the United States.—Kronstadt is withstanding all attempts of the Russian soviet army to retake the fortress.—The white Ruthenians declare their independence of Russia.—A royalist movement has developed in Siberia, communications with which have been cut off the past week.

Friday, March 11.

THE German imperial cabinet unanimously approves the manner of conducting the recent negotiations with the allied in London.—Allied representatives demand the immediate delivery of all military equipment held by Austria.—Twelve United States seaplanes complete the longest flight ever undertaken by a squadron of seaplanes when they return to San Diego from Panama.—Five big oil tanks destroyed by fire in Brooklyn.—Representatives of Turkey and the allies are discussing peace terms at a conference in London.—Three Michigan colleges meet in a triangular debate and discuss the proposition of prohibiting Japanese immigration.

Saturday, March 12.

PANAMA is asking an indemnity of \$1,000,000 from Costa Rica on account of recent military invasions of the former country.—The total expenditures for building in one hundred and forty-six American cities during February aggregates \$77,840,102, which is an increase of one hundred and thirty-two per cent over January.—A conference of all anti-Bolshevik parties is being held at Reval, Estonia, to aid in the movement against the present Russian regime.—Secretary of Agriculture Wallace is considering the advancement of funds to farmers in the drouth stricken areas of the country for the purchase of seeds for the coming season's crops.—Forty-four states join with Wisconsin in a test case before the United States Supreme Court to determine the power of the Interstate Commerce Commission to prescribe intra-state rates on railroads.

Sunday, March 13.

FIVE men are burned to death in a fire at Richmond, Va.—Leaders of the United States House and Senate meet to consider early tariff action.—The German federal council adopts the government's draft law providing for a definite dissolution of all German civilian guards and self-defense organizations.

(Continued on page 404).

Better Results From the Oat Crop

Mr. Bibbins of the Michigan Crop Improvement Association Gives Suggestions

A SURVEY of Michigan's oat crop indicates that a great many farmers are yearly losing money on this grain, largely due to the fact that inferior yields are harvested. We grant that the oat crop is not usually a big paying one; however, this does not permit losing money on the crop when one, with little or no added expenditure of labor or capital, may receive larger yields per acre and thus turn a losing proposition into a "money-maker."

Seed of Great Importance.

The writer has examined seed oats from nearly every section of the state with the result that an impression is left that a great deal of poor seed is being used as a foundation for the oat crop. Many farmers state that often the inferior yields of oats were directly due to the use of poor seed.

More attention should be given to seed oats. There is little excuse for the planting of seed that is of low germinability, foul with weeds or infected with smut. In all cases a thin stand is almost certain, resulting in a decreased yield. If the seed is dirty and smutty the crop harvested is not only inferior in quantity but is also of poor quality. Dirty oats never receive a top price on the market in that they make poor feed. Elevators do not like to handle such oats as it has been their experience that any grain containing excessive amount of foreign material is more likely to become damaged in storage. Foul seed and poor seed beds pave the way for bottom prices and damaged grain.

Use Adapted High-yielding Seed.

Variety tests clearly show that there is a wide range in the yielding abilities of different varieties. These tests also demonstrate the value of having varieties that are well adapted to the soil and climatic conditions. For instance, a weak-strawed oat, regardless of its yielding abilities has no place on the low lands of Michigan for it is the standing oats that produce the profitable yields and not those that "go down" and must be harvested with a mowing machine. The practice of endeavoring to profitably grow oats with

seed that is not adapted has long been proven wasteful; however, several Michigan farmers adhere to this custom in spite of the fact that their agricultural college has developed varieties which are well suited to their conditions.

Improved Varieties.

The Farm Crops Department of the Michigan Agricultural College has been working for over ten years in the breeding of oat varieties which are high-yielding and well adapted to the climate and soils of Michigan. Such varieties as the Wolverine, College Wonder, and Worthy oats furnish ample proof of the great value of this work.

The College Wonder oats is a high-yielding stiff-strawed variety that is well adapted to the heavier soils of Michigan. This past season many fine fields which greatly impressed the writer and many farmers with their high-yielding ability and stiff-strawed characteristics were observed at various points about the state. F. F. Cornair, Chesaning; L. L. Lawrence, De-



catur; R. W. Kimmel, Ypsilanti, and Frank Dexter, Milan, started in with pure seed of the College Wonder oat and harvested very satisfactory yields. This oat has done very well in the Saginaw Valley and in the counties of Tuscola, Midland, Gratiot, Monroe and Lenawee. In fact, it appears to be a highly valuable variety for those farmers where lodging frequently occurs.

The Worthy variety is one of the first oats put out by Professor Spragg and is a very popular and widely used variety. R. W. Sleight, Laingsburg; Wm. F. Dowling, Jr., Akron, and F. H. Ormiston, St. Johns, have used this variety for a number of years and have maintained a high standard of seed with the result that they are strong believers in the value of Worthy oats. County Agent Alex MacVittie, of Tus-

cola county, has accomplished an excellent service for farmers of that county, in aiding them to standardize on this variety. The community of Fairgrove represents standardization quite fully carried out. Ed. Coler, W. R. Kirk, W. S. Bell, S. J. Murday, and James C. Kirk, are located at that point and through the good offices of their county agent, have maintained a high standard with the Worthy oats. The characteristics of this variety are quite similar to those of the College Wonder oats but in recent variety tests the Worthy has not yielded quite as high as the latter.

A comparatively new variety known as the Wolverine oat has proven very popular with farmers located on loam soils. This oat has not quite as stiff a straw as the College Wonder oat but is better adapted to the upland soils as the oat matures a few days earlier, hence, has often escaped the disastrous effects of drouths. J. W. Pickett, of Caledonia, first discovered this oat and gave the seed to Professor Spragg, who has selected and increased the

ed. The value of the Wolverine is not confined to lower Michigan alone, as George Wheeler and W. T. Bandeen, at Mt. Pleasant, have demonstrated the worth of this variety under their conditions. G. R. Bogan, Rosebush, Isabella county, is another enthusiastic grower of the Wolverine. Walter Inglis, a short-course student at M. A. C. had an exceptionally fine piece of oats this year. County Agent Brewer, of Presque Isle county, is encouraging the wide use of the Wolverine variety throughout that section. The experimental work of G. W. Putnam conducted in the upper peninsula, as well as various farmers' experiences have shown the Wolverine to be a highly desirable variety for that section. In one case it yielded as high as one hundred and thirty-five bushels per acre. So we see that the county agents and several farmers have ample ground for boosting the Wolverine oats for their loam soils.

Know Your Seed!

Michigan farmers should carefully study their soil and climate, then choose the variety best adapted to their conditions and obtain the very best of seed of that variety. The Michigan Crop Improvement Association has worked in close harmony with the agricultural college to increase the various varieties mentioned herein, with the result that Michigan has quite an ample supply of high-quality seed oats. The Farm Bureau Seed Department is making a strong effort to obtain such high quality seed for its members at a very conservative price. This appears to be a real service to Michigan farmers, for in obtaining seed oats from this source they are assured of high quality seed, whose genuineness, purity and germinability are guaranteed.

Now is the time to start on the way for profitable oat production. Maximum yields per acre means minimum cost of production. High-quality oats bring greater returns, whether sold or fed on the farm.

Pure, well-bred, high-quality seed oats treated for smut, is the first and vital step in profitable oat production.

Proper Financing of Cooperatives

Mr. Powell Strongly Emphasizes Need of Sound Business Methods

UNLESS a cooperative association of producers is adequately and soundly financed, by its own members, it invites disaster," says G. Harold Powell, General Manager, California Fruit Growers' Exchange. Two kinds of capital are usually required; a permanent capital for buildings or other facilities, and a working-capital from which to advance money to the members before the returns are received from the crops, and to meet the running expenses of the organization.

The method of financing will depend on the nature of the organization and the character of its business. If it is to be equitable, the capital contribution of each member should be based on his patronage, whether it be in purchasing, storing, manufacturing, distributing, selling or other activities. In California, for illustration, a group of citrus-fruit growers who build a packing house contribute the permanent capital either by stock subscriptions or by membership fees. Such contribution is subscribed on the basis of the bearing acreage, the shipments,

the number of trees or the other unit of each member. This capital contribution may be made in advance, or, by agreement, it may be paid out of the proceeds of the sales of fruit. If the payments are deferred, the association, protected by the subscription agreements with its members, gives a note to a bank and obtains the capital immediately needed to provide the facilities. This liability may be paid off on receipt of subscriptions, or may be deducted from the proceeds, or both.

The working capital of an association is usually obtained through bank loans either secured or unsecured by the directors, or through loans of members, or through the credit furnished the association by negotiable promissory notes—which in turn are used as collateral for bank loans—the credit thus loaned by each member having a pro rata relation to the use he will make of the association. Working capital is also secured by using "trade acceptances" as security.

The reason the capital contributions of members of a cooperative associa-

tion should not only be proportional to the use which each makes of its facilities, but should also be kept progressively proportional to his uses, is in order that the capital of the individual member may not become disproportionate to his activities through lapse of time or as a result of changes in the amount of his patronage. If these capital contributions have been made on the basis of acreage, purchases, or shipments, a plan should be devised to keep permanent payments always proportional to the future extent of a member's business and provision be made that new members contribute on the same proportional basis. To effect this end, the members may agree to a redistribution of the capital from time to time, or, if so desired, there may be an accumulation fund paid in on a basis similar to the original contribution, such fund to be used as an equalizer of the capital.

A certain large, cooperative, capital-stock organization, known to the author, which furnishes packing-house and orchard supplies to citrus-fruit

growers, has devised a method of redistributing the capital on a proportional basis. The stockholders agree that they will readjust their stock in proportion to the amount of fruit which each shall ship through the marketing organization to which they belong—it being acknowledged that the shipments of fruit provide a fair basis for determining all contributions to the purchasing organization. Their agreement provides that a certain amount per box shall be deposited in a fund, called a "revolving fund," and that the agency which handles it shall redistribute the stock from time to time in proportion to the shipments of the stockholders. Such a transaction is, in effect, a sale of stock by those who ship less fruit to those who ship more, thereby always maintaining among the stockholders a proportional equality of stock ownership. Instead of using a "revolving fund," the readjustment of stock could just as well be made on an auditor's balance sheet similar to the adjustments of a clearing house in settling with its member banks.

Mid-State Farmers' Activities

By James C. Mills

AFTER much discussion in committee meetings the office of county agriculturist is now recognized by the Saginaw supervisors as having been officially created as a county department, and County Agent Arthur G. Bovay and County Club Leader Arthur Strang have been engaged to carry on the work during the present year. They are required, however, to devote all their time and attention to the duties of the newly created department.

Mr. Bovay will continue his program of work as outlined by him in January, which will include demonstration work, such as the introduction of new varieties of seeds, educational projects, particularly boys' and girls' club work, experimental work with seed and soil, and marketing or any other new field of endeavor that the United States Department of Agriculture and the Michigan Agricultural College may recommend.

Encouraging Use of Better Seeds.

Emphasis has been given to the improvement of crop production by encouraging the growing and use of pedigreed seeds, particularly of oats, wheat and rye. More than twelve hundred bushels of pedigreed seed oats, of Wolverine and College Wonder strains, were distributed last spring to farmers, and had much to do with increasing yields. This was because some of the more common varieties grown, lodging very easily on heavy soils during the wet season, were wasted, the pedigreed sorts being able to withstand severe climatic conditions. Demonstration plots of wheat, of Red Rock variety, and Rosen rye in four townships were supervised by the county agent, the results of which, in comparison with a number of other varieties, will be available this season.

Experimental work has proved that Grimm alfalfa is the hardiest plant and well adapted to the Michigan climate. Several communities in Saginaw county have ordered through the seed department of the State Farm Bureau, two thousand five hundred pounds of this selected seed. This means that two hundred and fifty acres, or seventy-five new fields, will this year grow this excellent forage crop.

Rural Russet Potatoes.

The potato crop is not an essential one in this county, and it is not customary to give much attention to quality of seed used. Attention of the county agent was called to this by the city food inspector, which showed that the supply coming into Saginaw was of inferior quality. As some of the common diseases affecting quality can not be detected readily unless the tuber is cut in two, the housewife was the first to make complaint. As a result of the investigation farmers were advised to use new seed, and in the vicinity of the city about seven hundred bushels of Russet Rurals were distributed.

Great Help to Cabbage Growers.

In the matter of better marketing considerable assistance was given to subsidiary organizations, principal of which is the Saginaw Produce Growers' Exchange, organized principally for the purpose of marketing cabbage. During the season one hundred and fifty carloads of green cabbage were marketed, amounting to several thousand tons. Local buyers' prices were from two to five dollars per ton lower than the prices secured by the exchange; and if this organization had not rendered this service to the growers, it is doubtful that half of this cabbage would have been marketed at all, as the prices offered by local buyers

would scarcely have paid growers for hauling the product to the cars.

About twenty cabbage growers pooled their product at an idle kraut factory where eight hundred barrels of kraut were made. At present prices the growers would realize about \$18 per ton for their cabbage. Without this outlet and enterprise the product would have been wasted, as it was grown ten or twelve miles from shipping points, and the prices offered would not have paid the cost of hauling. The saving effected on this product was fully three thousand dollars.

During May, June and July four new cooperative associations were organized to buy supplies and market farm products, with a total membership of seven hundred and thirty-one. The volume of business was \$126,200, and the saving effected was \$8,650. To the credit of the county agent and the progressive leaders there are, at the beginning of 1921, twelve cooperative associations in successful operation, doing an aggregate business of a quarter of a million dollars yearly, at a profit of \$44,000.

Bean Laboratory Program.

The farm bureau program for 1921 carries a tentative arrangement with the United States Department of Agriculture for the establishment of a bean laboratory in Saginaw. The plan is to have from two to four farmer cooperators in every township grow from one to three acres of different varieties of beans under the direction of the farm bureau inspectors and the department of agriculture. These cooperators will be furnished with several varieties which are believed disease-resistant, and these will be studied during the growing season by experts in charge.

There will be one plot located somewhere near the city, which will be sale.

owned by the farm bureau and the United States Department of Agriculture, where certain tests and perhaps inoculation of the bean plant for the different diseases, will be made. This plan will give the farm bureau a splendid opportunity to learn more about the disease-resistant varieties, and at the same time plan out control measures through the growing of disease-free and disease-resistant beans. The diseases to which particular attention will be paid are the bacterial blight, anthracnose, mosaic, rust and root rots.

The maintenance of a permanent field station of this kind will provide a means of direct contact with the bean growers, through the farm bureau, by placing field trials and demonstration plots in the various parts of the county, of such beans as the cooperating parties wish to have tried out under field conditions.

Spotted Poland-China Sale at Frankenmuth.

About five years ago the Grueber Brothers, of Frankenmuth, brought in from Indiana several full-blooded Spotted Poland-China hogs for breeding purposes. At the time there were few if any animals of this breed in the county; and the owners of the new stock have since directed their efforts toward raising the standard of hogs in their community. The excellent type which they have emphasized in their breeding is worthy of commendation.

The first annual sale of Spotted Poland-China hogs was held recently at the farm of Alfred Grueber, two and one-half miles from Frankenmuth village. This was also the first sale held in the state of this particular breed, and much credit was given Mr. Grueber for his excellent handling of the

What the Farm Bureaus Are Doing

THE South Dakota Wool Growers' Association voted to support the wool marketing program of the American Farm Bureau Federation. They recommended the adoption of a maximum wage scale of ten cents per head and \$60 a month for herders.

A. J. Rogers and A. T. DePue, state executive committeemen of the farm bureau, were appointed the live stock committee of the organization by President Nicol at the March 8 meeting of the executive committee. The live stock men at their annual meeting in February endorsed the State Farm Bureau and agreed to become the official live stock body of the organization under the commodity control plan.

The perishable freight division of the American Railway Association has been abolished and all activities in connection with the perishable freight tariff have been consolidated under the direction of E. S. Briggs, Pontiac Building, Chicago, Illinois. Mr. Briggs is chairman of the National Perishable Department of the State Farm Bureau. All refrigerator car business should be taken up either with the farm bureau traffic office, Norris Block, Grand Rapids, or with Mr. Briggs.

According to a new express classification ruling, the express companies will no longer accept baskets of fruit in small packages unless they are tied together in lots of not less than four nor more than ten. This practically does away with the shipping of small five-pound baskets of grapes by express in less than carlots. The farm bureau traffic department believes that

this ruling acts as a discrimination against Michigan shippers of small fruits, and it has joined with other traffic agencies in protesting the ruling.

A representative body of the Granges, the Dairymen's Association, the Federation of Farm Bureaus, the Colleges of Agriculture, and the State Department of Agriculture of the New England States formulated a plan for presenting their claims for protection in tariff legislation.

Nebraska favors a uniform farm wage scale.

The dairy interests of Indiana created a dairy department as a part of the Indiana Federation of Farmers' Associations.

Indiana wool growers decided to have a 1921 wool pool.

Illinois is trying hard to meet her quota of one million bushels to the gift corn project. One county set aside a gift corn day and received three carloads. A wonderful success is predicted for the corn project.

All farm organizations interested in cooperative marketing are to appoint delegates to vote on the findings of the Committee of Seventeen.

North Dakota discussed at length the proposition of marketing through the National Sales Agency all their grain as outlined by the Committee of Seventeen.

The number of all live stock on North Dakota farms has decreased twenty-nine per cent in total value during the past year. Farmers are reluctant to decrease their dairy herds. The marketing activities of the In-

diana Federation of Farmers' Associations are handling by a grain committee of ten, a live stock committee of ten, a canning crops committee of five, a wool pool, a milk producers' committee, a live stock marketing agent, quarterly live stock reports and the Federated Marketing Service of Indiana, composed of the Indiana Federation of Farmers' Associations, the Farmer Grain Dealers' Association and the Indiana State Grange.

Forestry interests of Michigan, as represented by the Conference of Michigan Foresters, stand solidly behind the program of the State Farm Bureau for a comprehensive program of forest fire protection and reforestation under the direction of the proposed State Conservation Department and insist that \$150,000 should be appropriated for fighting forest fires. Legislation defining the methods to be employed to insure forest protection has received the careful consideration of these experts.

RESOLUTIONS of the Menominee County Farm Bureau asking for a state appropriation for the Menominee County Agricultural School were adopted by the executive committee of the Michigan State Farm Bureau at its regular meeting March 8, and recommended that the school receive the same consideration at the hands of the legislature as other educational institutions of the state.

The executive committee decided that hereafter the State Farm Bureau would pay twenty-five per cent of the

per diem expenses of assistants sent out by the State Farm Bureau to help in the organization of cooperative associations and farm bureau locals. The county will be asked to pay twenty-five per cent and the local to be benefited will be assessed fifty per cent.

The committee decided to send Frank Coombs, farm bureau traffic commissioner, to Chicago March 14 to attend the meeting of farm bureau traffic men, called by President J. R. Howard, of the American Farm Bureau Federation.

Despite the present stagnation in the wool market, the various farm bureau wool pools are disposing of wool in considerable quantities at advancing prices. During the week ending March 5 a half-million pounds of wool were sold at the following average prices: Bright wools: Delaine 40@41c; fine staple 33@34c; half-blood 30@32c; three-eighths-blood 27@28c; quarter-blood 25@26c. Semi-bright grades realized three to four cents less per pound, with the low-quarter around 18@20c.

Farmers having wool in the Michigan pool have placed orders for two thousand blankets to be made from the virgin wool in the pool. Montana has sent seven carloads of wool to a mill to be made into cloth, blankets and robes. The Illinois Agricultural Association is also manufacturing blankets and bats. Iowa, Maryland and the New England states are considering the adoption of this direct to consumer method of marketing a portion of the clip.

Earmarks of a Pure Cooperative

By Bruce Lampson, of the Washington-Idaho Wheat Growers' Association

IN the first two articles of this series, the fundamental principles and object of the two channels through which farm products are marketed were discussed. The fact was mentioned that the object of the speculative system was to make money by buying cheap and selling high. It is organized on a basis to accomplish that purpose. The fact was also mentioned that the object of the cooperative organization was to sell its members' product to the consumer at a price that will insure its entire consumption and yet get a fair price for the producer. This and the succeeding two articles will deal with the essential features of a pure cooperative association.

Membership.

The first essential in eliminating adverse interests and reducing the spread between the producer and the consumer is that the marketing organization limits its membership to persons whose interests are identical; that is, producers of certain commodities. If you want to sell grain, raisins, poultry, rice, walnuts or citrus fruits, the membership should be confined to the producers of those respective commodities. If one organization permitted in its membership producers of all of these commodities, a mass organization with diversified interests would result. The poultrymen would not be interested in selling lemons; the grain grower would not be interested in selling walnuts or rice. The specialists who are employed to operate the selling agency could not have a thorough knowledge of the grading, handling, and selling of all these commodities. To be efficient a selling organization must eliminate adverse and diversified interest. It must concentrate upon one commodity. Every member in the organization must have the same interest, and membership, therefore, must be limited to producers of one certain commodity.

The California Poultry Producers' Association sold in the first year of its existence, 1917, 213,532 cases of eggs for \$2,382,444.23, at thirty-four cents per dozen net to the producers; in 1918, 270,313 cases were sold for \$3,827,523.17, at forty-two and a half cents net to the producer; in 1919, 315,257 cases were sold for \$4,680,065.75 at forty-five cents net to the producer. This association increased its sales fifty per cent in three years and secured thirty-three per cent advance in the price to its members.

According to an unofficial report, the product from 600,000 hens was signed up and sold through this association in 1917, and in 1920 the product from 1,800,000 hens was signed up and sold. Adverse interests are eliminated and concentration and efficiency result where the membership of a cooperative association is limited to producers of one commodity.

Organize by Locality to Avoid Locality Competition.

The distributors of these commodities should not only confine their membership to producers in one locality, but they should organize as extensively as possible by commodities. The consumer does not care whether the wheat that he feeds or that makes his flour, is grown in Kansas, Washington, North Dakota, Idaho, Oregon or any other state. The consumers of oranges and lemons, or of eggs, do not care whether those oranges and lemons and eggs are produced in Florida or California.

The consumers of a commodity are interested in the price and grade of that commodity, not where it was pro-

duced. They buy commodity—not geography.

When a marketing association is organized by locality, each locality is hunting for a market. That necessitates a sales department for each locality. Those sales departments generally find the same good market the same day and each ship to that market a sufficient supply of the product. The results are a glutted market and a loss to the producer. Organize by commodities, not by localities, and have a central selling agency. That is absolutely necessary for an efficient distribution.

The California prune growers organized by localities as early as 1900. Each locality contended that it had the better prunes. The speculators took advantage of their jealousy and competition. They played one local organization against the other and repeated failure to the locals was the result. In

identical and the personnel of the governing board to actual producers, it is highly important that the governing board be democratically elected. They should be nominated by a primary election.

State laws usually require that the directors of any corporation shall be elected at an annual meeting. It is impossible for all farmers or even a majority of the farmers of a large organization to attend the annual meeting and use their privilege of voting. To make it possible for every member to vote and have a voice in saying who should represent his organization, the capital stock concerns have provided that each member may vote by proxy.

The thing that this proxy system of voting permits has occurred in most capital stock organizations; that is, the gathering and voting of proxies by a few ring-leaders. Through this proxy system, a few men can and often have

sociation, one member should have only one vote. It is not cooperation where "big fish" are permitted to eat up the "little ones." This may happen and often has happened, in organizations where capital stock votes. Money or product should not vote. Members should vote.

Every American citizen has one vote because that is democratic. The parents with one child have, and should have, just as much to say about the government under which that child shall live, as the parents with several children have to say about the government of their children. The man with a small quantity of products should receive the same price and have the same protection on his small quantity as does the man with the large quantity. The future of American agriculture depends largely upon the small farmer. His rights should be and are protected in a pure cooperative concern where one member has one vote.

The more recently formed cooperative associations, such as the Washington-Idaho Wheat Growers' Association, have adopted this feature. This is proving a very strong feature in securing the confidence and cooperation of the medium and smaller farmers. It is one of the absolute essentials in a pure cooperative association.

Specialists Should be Employed.

In order to eliminate the adverse interests and have a pure cooperative association, the directors must be actual producers of the commodity for which this distributing organization is built. These men cannot be actual producers and also be specialists, such as traffic men, expert salesmen, statistical men and other specialists.

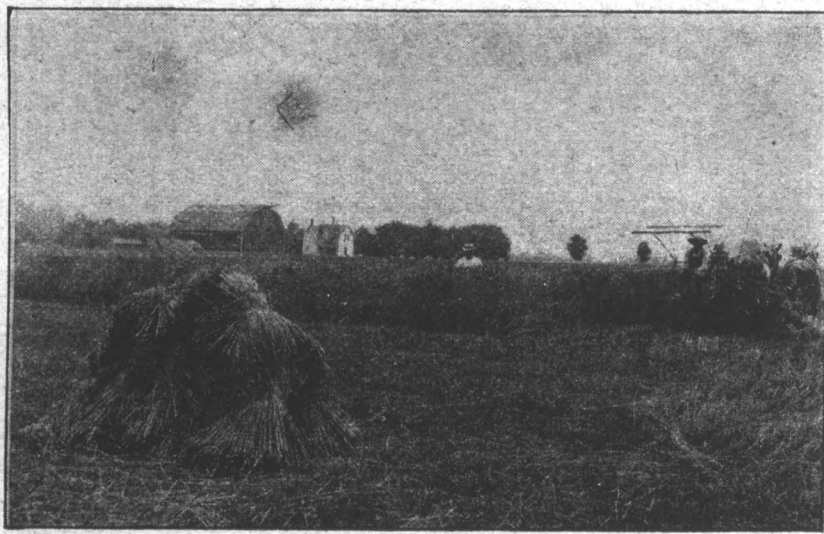
These directors must, therefore, have highly trained specialists for each department, and a general manager with a high executive ability. No organization ever became large and efficient with inexperienced men as operators.

On the other hand, no organization with real possibilities ever remained small and inefficient with experienced and efficient men as its operators. It is absolutely necessary that a large cooperative association secure for operators, highly trained and efficient men and pay well for their services.

The prune growers have secured for their operators trained men who study prune marketing three hundred and sixty-five days a year. The poultry producers have learned that the most experienced expert in selling eggs is the cheapest sales agent, regardless of his salary. The Wheat Growers' Associations of Washington and Idaho will have the handling of more than fifteen million bushels of wheat for a period of six years commencing with the 1921 crop. Oregon and Montana are now adding a large quantity to this volume. They are employing experts at the head of each department.

Sell Only Members' Products.

A producers' selling organization should sell only members' products. Buying is adverse to selling. If any provision is made in a producers' selling association for buying, part of the organization's activities are then adverse to the producers' interests. Capital stock has to be provided, and dividends paid; buying as cheap as possible follows. A pure cooperative selling association must sell only. There is no provision for buying non-members' products; it must sell the produce of its members only. This keeps the interests of the selling agency identical with the producers' interests.



Efficient Marketing Machinery and Economic Production Are the Two Problems of Our Grain Farmers. This Heavy Crop of Hybrid No. 6 Wheat was Grown by Edward Rinke, of Tuscola County.

1916 these prune growers organized state-wide, by commodity, not by locality. They set up a central selling agency and are now the third largest cooperative selling organization in the California chain. Each locality receives the same price upon the same grade of prunes. Seventy per cent of the prunes of California are now sold through the prune growers' organization. Years of experience has proven conclusively that producers must cooperate by commodity, not by geography.

Governing Board.

After eliminating adverse interests by organizing by commodity and limiting the membership to the direct or indirect producers of that commodity, the governing board should be limited to members who are actual producers.

No farmer or producer of any commodity should have his product sold and his selling organization governed by any person whose interests are adverse to his. Every director should be an actual producer of the commodity being sold and have his product in the pool. Professional or business men who have land and are renting that land for crop rent and have that product to sell, should be members and sell through the association, but should not be on the governing board. Their interests are diversified and too often not in accord with the actual producer except in selling the one commodity which is generally a side line with him. In pure cooperation, it is essential that the directors of the cooperative organization be actual producers of the commodity being sold.

Election of the Directors.

In addition to restricting the membership to persons whose interests are

elected and reelected themselves to the controlling offices. A capital stock concern does not care who is manager or who the directors are as long as their object is attained; that is, to pay the members good dividends upon that capital stock. The point is this: What can an autocratic capital stock buying concern, whose only object is to pay dividends, do to get a farmer more money for his products? Nothing!

The governing board of a pure cooperative association, which has no adverse interests and whose sole object is to sell as directly as possible to the consumer at a reasonable price, must be nominated from among the members by a direct vote of the members. They must be nominated by a primary election. To fulfill the legal requirements and assure the election of these nominees, the association election regulations must state that the nominees, nominated at the primary election shall be elected at the annual meeting. The Wheat Growers' Associations of the northwest have provided that the members can vote in the election, either by mail or by personally depositing their ballots.

It should be borne in mind that the elimination of the proxy system and the use in its stead of the primary election is the only possible way of conducting an organization upon a strictly democratic basis. Any organization to be efficient must have the personal support of its members. The primary election is absolutely essential in making the organization democratic and keeping the support of its members.

One Member, One Vote.

In a pure cooperative marketing as-

OUR SERVICE DEPARTMENT

FERTILIZER FOR VINEYARD.

What is the best fertilizer for a vineyard, other than barnyard manure, also for strawberries and blackcaps?

Van Buren Co.

W. A. R.

Probably the best way to fertilize a vineyard, also strawberries and blackcaps is to use a cover crop and fertilize this heavily with a fertilizer containing a good per cent of phosphorus and potash. Where no barnyard manure is available organic matter can be supplied by growing a crop of oats or a crop of rye and vetch between the rows, this to be seeded in August or early September. The fertilizer can be applied to this coverage crop and you will accomplish the same purpose as you would with barnyard manure, supplying organic matter and the essential elements of fertility.—C. C. L.

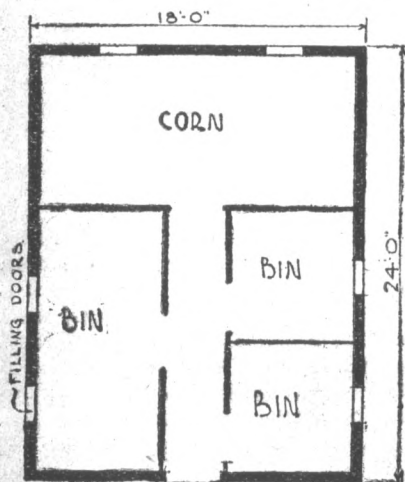
THE FARM GRANARY.

Yours relative to the construction of farm granaries, is received. I note the enclosed clipping from the Michigan Farmer, showing a combined corn crib and granary. There are many good suggestions in this clipping, but the kind I had in mind was simply a granary without corn crib. In many sections of the state farmers do not raise corn, except for fodder, and while in the southern part, no doubt, corn is grown quite extensively, yet in the central part most of the farm granaries are simply for grain. I am surprised that, while nearly every kind of farm building has been suggested and illustrated, very little is said about the granary. It occurred to me that the most convenient kind would be one where the grain is stored in bins on the upper floor, with proper spouts for drawing the grain from any bin. This, of course, would require an elevator to elevate the grain into the various bins from some bin on the ground floor into which the grain is dumped during the threshing, and immediately elevated into bins. This would give space on the lower floor for fanning mill, bags and other commodities. I fancy that a farm granary that would hold, say up to five thousand bushels, would be large enough for most any farm, with the exception of some very large farm which, of course, would require a larger one.

Chippewa Co.

J. W. S.

We show herewith a small granary that would be suitable for a small farm. It is eighteen feet wide and twenty-four feet long, but any length can be had. The floor and foundation



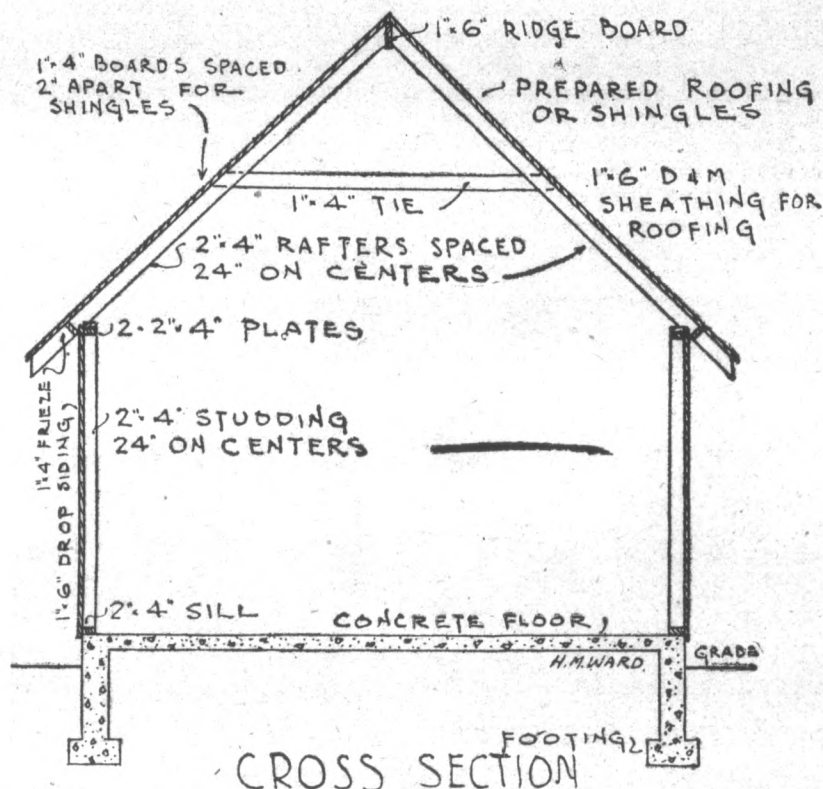
FLOOR PLAN

are of concrete, which makes the crib proof against rats and mice and other losses.

The rats of America do greater damage than the fires of America—the most thoroughly fire-swept and damaged nation on the globe. An official of the federal government, who has spent his life studying the rats and other small animals of the country, claims that there are at least two hundred million rats in America; one-fourth of them in the cities and towns

and three-fourths of them on our farms. A dollar a year is a very conservative estimate of the amount of damage a rat does in one year. So this man's estimate on this basis—which is exceedingly conservative—shows that it requires all the labor of two hundred thousand farmers with their full equipment of teams and implements working constantly to feed the rats of the nation.

If one should not desire the corn crib it could easily be made into a bin for small grain by closing the doors along the bottom. With the use of these doors, as shown by Figure 3, the



CROSS SECTION

bin can be used for either corn or small grain, as desired.

The floor plan shows the layout, but this can be changed to suit one's taste or conditions. The cross section shows the size of lumber or timbers used and the construction details.

For the average farm we doubt if it would pay to go to the extra expense of putting the grain bins on the second floor as heavier lumber must be used. But if one wanted to go to this additional expense it would be a saving of labor.—HARLEY M. WARD.

POTATOES ON POOR SOIL.

I have a field which I want to plant to potatoes. It is a clay loam but it is badly run. Can you tell me how much fertilizer to use to the acre, and the best way to put it on, and what kind to buy?

Ionia Co.

W. S. W.

If the soil is badly run out as you indicated in your query, no amount of fertilizer nor kind will assure you of a profitable crop of potatoes on such a soil. For successful potato production the soil should be prepared for this crop for several seasons before the potatoes are planted. One of the reasons for the low average yield of potatoes in Michigan, and the small profit or no profit which many growers secure, is the attempt to grow potatoes in uncongenial soil. No crop is more particular about soil conditions than potatoes.

It is not only necessary to have an abundance of plant food, but the soil must be well filled with organic matter to provide for water-holding capacity and an abundance of aeration. The importance of provision for aeration associated with the bacterial action which is very essential for certain

would advise you to use complete fertilizer carrying, at least, four per cent nitrogen, eight to twelve per cent phosphoric acid and four or five per cent of potash. This should be used at the rate of at least three hundred pounds per acre, and five hundred will be still better. The method of application should be to either use the planter with the fertilizer attachment or a grain drill with a fertilizer attachment. If neither of these tools is available, sow the fertilizer broadcast, then harrow the soil for planting and thoroughly disc or harrow the fertilizer into the soil. It is very essential that the fertilizer must be mixed with the soil.

C. W. WAID.

WHICH BREED OF POULTRY?

I would like some advice in regard to changing the breed of poultry I keep. I have been keeping Rose Comb R. I. Reds for a number of years, and like them very much, but have been thinking that I might get more eggs from Leghorns. Are they good winter layers? And are their eggs as large as the Reds? And is there any choice as to the laying qualities of the different varieties of Leghorns, and would it be well to make the change?

Mackinac Co.

H. E. P.

The Leghorns are considered first-class egg machines at all seasons, but some breeders think that the heavier breeds are a little the best layers in the winter if they are carefully selected individuals from a laying strain. A good strain of Leghorns will lay eggs as large as the Rhode Island Reds. The White, Buff and Black Leghorns all have their enthusiastic advocates. But the White Leghorns have been in the lead because the broilers from a White breed look the best on the market and many prominent poultrymen have bred the White Leghorns for years and car-

ried out much fine work in the improvement of the breed.

There is so much good White Leghorn stock in the country that it is easy to obtain good birds. The Rhode Island Reds are one of the most popular breeds in the country which proves that they have a fine utility value. Whether you change breeds or not depends largely on personal preference. As a commercial egg farm proposition we should like the Leghorns best. But for a farm flock we would prefer the Rhode Island Reds.—R. G. K.

KIND OF FERTILIZER.

What kind of fertilizer is best for clay loam, also for sandy land?

Oakland Co.

J. E. C.

Acid phosphate alone in a majority of instances is a good profitable fertilizer on clay loam soil, also on average sandy soil, but some sand is deficient in potash and there you should apply not only phosphoric acid but potash. You can best determine what and how much by experimenting. Leave a strip in the field and notice the results of different kinds of fertilizer and compare the results with each other. In this way you can determine whether your land needs nitrogen, phosphoric acid or potash or any combination. But on general principles it is safe to apply acid phosphate. Most of the soil in Michigan responds to this treatment.

RYE OR CORNMEAL FOR GROWING PIGS.

Which would be the best to feed to growing pigs, ground rye or cornmeal? The pigs weigh about 100 pounds. If any difference, how much? Rye would bring about \$1.00 per bushel and the cornmeal costs \$2.25 per cwt.

Otsego Co.

C. B. L.

Pigs do not like ground rye very well. They like cornmeal much better, but in connection with this you ought to have some other food that is richer in protein. If you have skim-milk and will make a slop of cornmeal or ground rye you can get along very nicely. If you have no skim-milk then I would prefer to feed wheat middlings in preference to either rye or cornmeal. Pigs

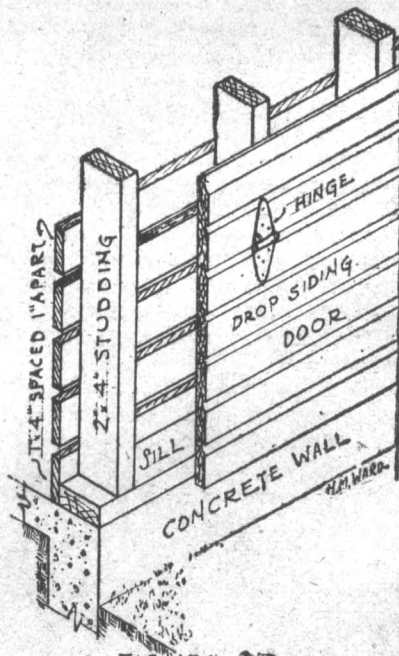


FIGURE 3

will grow nicely on wheat middlings alone, but will not do well on cornmeal alone, nor will they do well on ground rye alone. If you have skim-milk you can mix the corn and rye together, half-and-half, and make a slop of skim-milk and they will do well.

THE CLAN CALL.

This is the title of a new serial, the first installment of which appears in this issue. See page 386.

When Should We Sell Wheat?

An Analysis of Present Market Conditions by Gilbert Gusler

WHETHER it is advisable for a farmer to hold wheat until the next spring before selling, depends primarily upon the normal seasonal trend of prices. As might be expected, prices are lowest as a rule, during July, August, September and October, since sales of wheat by farmers who are not in a position to hold it puts the heaviest burden of supplies upon the market at that time. The wheat crop year, as it is considered by the trade, begins July 1. New wheat

HAVE prices usually advanced enough to cover these essential costs and risk, or has it been more profitable to sell at harvest time? The proponents of speculative markets claim that when sales of grain are heavy in the fall of the year and prices are depressed that speculators will buy and prevent prices from going as low

individual figures shows that March prices usually are above those of February but in two cases March was considerably below February and these two abnormal instances more than off-

set the trend in the other eight. May and June prices are highest and as an average of the ten-year period these months have been about twenty-five cents higher than prices in the July to October period. Again, it is to be remembered that these are first-of-the-month prices.

During the 1919-1920 crop season prices were much higher than the ten-year average, as well as more erratic. Again, May and June were the highest months.

Prices remained high until the first of July, 1920, but the drop after that date was very precipitate until December, since when the price shows but little variation. It seems quite unlikely that prices next May and June will be as high as they were last July.

Prices during the war period were admittedly abnormal in behavior. An average of the ten years, 1904-1913, shows much the same seasonal trend, the low month. Likewise an average for the week ending nearest to the

cent for nine months it would amount to about five cents per bushel when wheat is \$1.00 per bushel, and seven and one-half to eight cents at present prices.

Storage charges, if the farmer has his own granary, can be ignored but if he must pay for storage this would be a big item in determining whether he could afford to hold. Other factors, such as waste by rodents and weevil should be considered if there is likelihood of damage by them, and also the fact that it may be inconvenient to haul wheat in May when the price is usually highest.

As an average of the last ten years it certainly has been profitable to hold wheat until late in the crop season. During earlier years it has been profitable to hold from the month of lowest prices, July or August, until May, the month of highest prices.

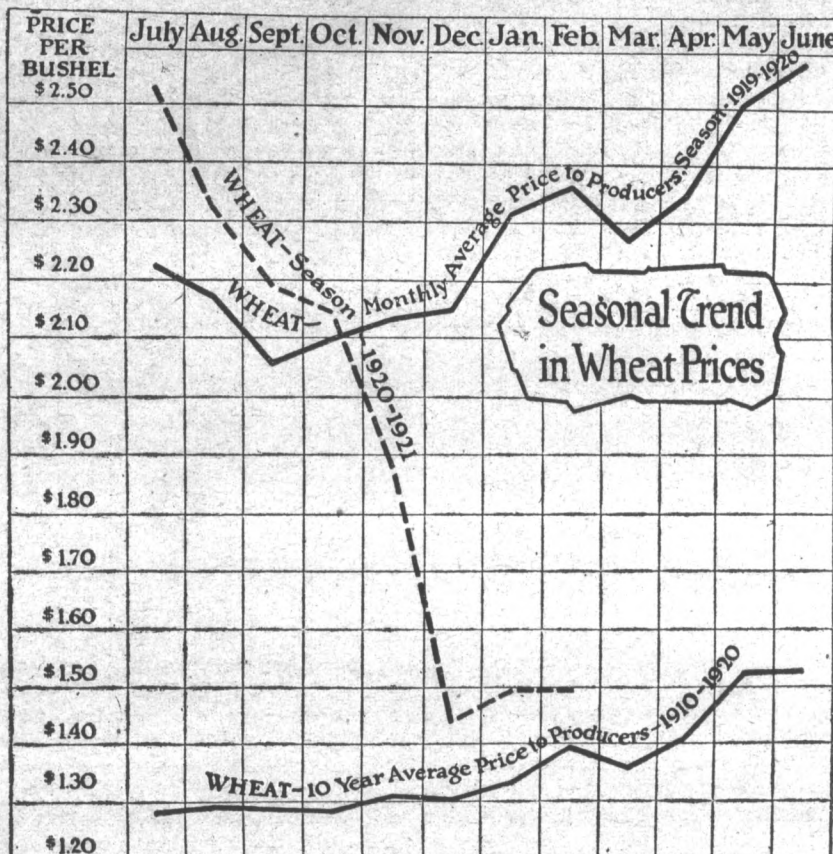


Chart No. 1.—The prices used are average prices paid to producers as estimated on the first of each month by the Department of Agriculture. The ten-year average line is lowest on July 1 and highest on May and June 1. May is really the high average month. The usual advance has been about twenty-five cents per bushel. The course of prices during the 1919-1920 crop season was much similar to the average, although on a higher level. Note the sharp break from July to December, 1920. This season has been a decided exception to the rule. An advance in prices during the remaining months is possible but it is hard to see how they can be lifted as high as they were early in the harvest season.

rom the southwest begins to arrive as they otherwise would. Also that early in that month. For the majority of the wheat growers August is probably the earliest month in which wheat could be marketed even if sold direct from the threshing machine. Most spring wheat growers cannot get on the market until late August and the bulk of such wheat must, of necessity, be marketed in September or later.

Estimates made by the department of agriculture show that as an average of the five crop seasons beginning in July, 1914, and ending June, 1919, sales of the wheat crop were distributed as follows:

	Cent. Per
July	12.58
August	14.88
September	16.8
October	14.58
November	10.96
December	7.8
January	5.68
February	4.56
March	3.34
April	3.06
May	3.08
June	2.28
Total	100.00

Over three-fifths of the crop is sold during the first third of the year, and less than one-eighth during the last third of the year.

Wheat prices should be higher in the spring than just after harvest in order to cover interest, shrinkage, storage charges, and risk of a decline in a slight recession. An analysis of the

speculative selling in the spring when prices are high prevents them from going as high to the consumer as they otherwise would. Many farmers believe that the reverse is true; that speculators are most willing to sell "short" when the volume of grain being sold by farmers is heaviest and that speculative buying is most in evidence after the bulk of the grain has passed into consumptive channels and seasonal scarcity is at hand. They believe, in brief, that speculative operations, instead of stabilizing prices, tend to depress them unduly in the fall and advance them too high to the consumer after most of the grain has left the farmer's hands. These farmers prefer, therefore, to hold their wheat and to sell it upon the higher market in the spring if they can do so.

Chart No. 1 shows the usual trend of prices paid to producers for wheat as determined by the monthly estimates of the department of agriculture. The figures are for the first of the month. The lower solid line is a ten-year average. During the ten years considered there has been on the average but little difference as between the first four months of the crop year. A very small advance has occurred as

but February advanced over ten cents above the October level. March shows a slight recession. An analysis of the

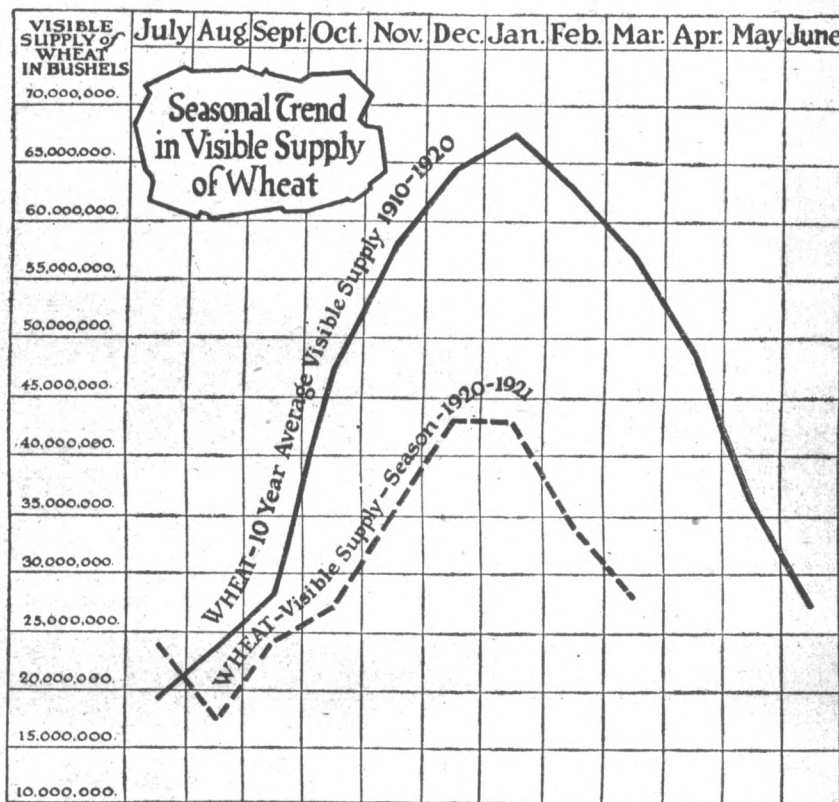


Chart No. 2.—The visible supply is the store in terminal elevators at the leading primary markets. At this season it is a rough index of the available supply. The usual trend in the size of the visible supply is a big increase from July until January, then a rapid decline until the new crop begins to move again. Since August, 1920, the visible has been below the average and on March 1, 1921, it was only about half the usual size at that season of the year. In fact, it was only about as large as it usually is on June 1.

of Chicago prices for the thirty years, first of the month. The ten-year average shows that there is a sharp advance from about 20,000,000 bushels on July 1 to over 67,000,000 bushels on January 1, then an equally sharp decline to about 27,000,000 bushels on June 1.

On July 1, 1920, the visible supply was slightly above the average as a result of the big 1919 crop. A month later it had fallen below the average and it has been losing ground gradually ever since.

On December 11, 1920, the supply reached its maximum at 48,408,000 bushels, since which time it has rapidly declined to 28,059,000 bushels at the end of February, or about fifty per cent of the average at this season and about the same as the average amount on June 1 during the preceding ten years. This is only one out of a number of similar instances.

SHRINKAGE amounts to about one and one-half per cent which may or may not be offset by a change of grade. Counting interest at seven per

(Continued on next page).

Snell Forestry Bill Favored

By P. L. Buttrick, Assistant Professor of Forestry, Michigan Agricultural College

THE Snell bill introduced into congress during the past December by Representative Snell, of New York, has already attracted much attention. It is designed to increase the scope of forestry practice in the United States. Being backed by strong interests, it seems to be on its way to passage—if not by this congress probably by the next. This bill is the result of the widespread feeling of insecurity as to the future supply of raw materials for our wood-using industries and a realization that the long-heralded timber famine is actually becoming a reality. It is based upon the idea that to insure a timber supply for the future the nation must practice forestry—which means simply growing trees and forests the same as we grow other crops.

Since forestry is closely akin to agriculture and the bill itself has been referred to the committee on agriculture of the house of representatives, it cannot but be of general interest to farmers and especially to farmers in a state with such important woodland interests as has Michigan, where forty-two per cent of the state is forested. This amounts to 15,500,000 acres, of which nearly 3,000,000 acres, or about twenty per cent, is in the form of woodlots. The acreage of woodlot on each farm in the state averages fourteen acres.

Let us therefore look over this bill and see how its passage will affect the general interests of our state and specifically those of the woodlot owner.

The preamble to the bill states that it is "to provide through cooperation between the federal government, the states, and owners of timberland for adequate protection against forest fires, for reforestation of denuded lands, for obtaining essential information in regard to timber and timberlands, for extension of national forests, and for other purposes, all essential to continuous forest production on lands entirely suitable therefor." All these are on their face laudable objects and seemingly imperil no legitimate agricultural interest, although perhaps on the other hand, in no special way aiding them.

It is never safe, however, to judge of the contents of a bill from its preamble. An examination of the contents

of this particular one shows that it intends to accomplish the following things:

1. To provide in cooperation with state and private agencies for protection from fire of forests on private and state-owned lands and for the encouragement of conservative cutting of timber in such a manner as to renew the forest growth on land suitable for it—not on agricultural land—something not ordinarily attempted by lumbermen, but easily possible.

2. To provide that no state shall come under the provisions of the bill which does not supply a sum equal to that allotted by the federal government for that particular state. This is only the extension of the principle of federal cooperation with states in forest fire prevention now operative under the Weeks law, a cooperation already taken advantage of in Michigan. This bill carries an annual appropriation of \$1,000,000 for five years for this cooperative fire protection. Michigan last year was allotted \$2,110 of federal funds for this purpose.

There are approximately 445,000,000 acres of forest land not belonging to the federal government in the United States, of which approximately 15,500,000 acres are in Michigan, therefore if the allotments under the Snell bill are made to the states on the basis of their comparative acreage of forest land, Michigan's share, according to the above figures will be \$58,000. The bill, however, specifically states that no expenditure of funds shall be made in any state unless that state conforms to the federal standards in its fire prevention organization. It may as well be admitted that the one now operating in Michigan could not do this. The first portions of this bill would aid the woodland interests of the country about as the Smith-Lever act aids the strictly farming interests.

3. To provide for a comprehensive survey of the timberlands, and timber requirements of the nation. This means in part a combined forest land and soil survey—something which the legislature of Michigan provided for in this state some years ago but which owing to the war was never made. An appropriation of \$1,000,000 annually for five years is provided for this purpose and for such activities other than fire

protection as are mentioned above.

4. To provide for an appropriation of \$1,000,000 annually for the next five years for investigation; (1) in forest research—as necessary to the promotion of tree-growing as is agricultural research to the progress of general agriculture; (2) for investigations in wood utilization—which is to forest production what marketing studies are to farming, and (3) for study in forest taxation. Foresters and students of taxation are universally agreed that taxes on forest land are too high and should be based simply on the value of the land and not on that of the growing crop, which should only be taxed at the moment when it is cut. Investigations resulting in definite proposals to do this would pave the way for tax reforms greatly to the interest of farmers owning woodland. The sum suggested for this appropriation may seem large but is only about twice as much as has annually been appropriated for forest research.

5. It provides for an appropriation of \$1,000,000 yearly for the next five years for reforestation of denuded lands in the national forests. There are thousands of acres in these forests not now in timber which should be made to serve the purpose for which they were set aside when they were organized. The work of reforestation has lagged because appropriations have been withheld. This portion of the bill is of particular interest to Michigan since there are two national forests within her boundaries upon both of which much planting needs to be done. Such work calls for local labor which brings money into the pockets of the inhabitants near the forests.

6. To provide for an appropriation of \$10,000,000 annually to apply on the act of March 1, 1911, commonly known as the Weeks Law. The purpose of this act is to permit the purchase of lands on the headwaters of navigable streams to protect them from deforestation which causes erosion and interferes with navigation. The operation of this law has proven universally satisfactory and the citizens of New Hampshire, Virginia, and North Carolina, where most of the lands have been purchased, are fully in favor of it and advocate further appropriations for carrying out its provisions.

It is proposed in the Snell bill to

withdraw the provision of the Weeks Law, requiring that the purchase of lands be on the headwaters of navigable streams and to permit the purchase anywhere of lands better suited for timber production than any other purpose. This provision is of interest to Michigan in search for a solution for her waste land problem. There is probably no region in the United States where there is so much land more suitable for timber production than for agriculture which can be obtained so cheaply or planted to trees at such slight cost, as in some portions of northern Michigan. This is well recognized at Washington.

7. To provide that lands now the property of the United States and not used for certain specific purposes shall be classified and that those lands found to be more valuable for growing timber than for other purposes shall be added to the national forests. There are thousands of acres of non-agricultural public lands in the west and probably some in Michigan not incorporated in national forests. At present they are subject to depreciation by fire and timber thieving. If pre-empted by lumbermen their timber would be stripped off and the land would become useless. The logical thing to do is what is proposed by this bill—to incorporate them into the national forests where they will continue to produce timber to be marketed for the public good.

It seems evident from the above analysis, first, that this bill is in no way inimical to agricultural interests; secondly, that it holds possibilities for good to the state of Michigan, and in many cases specifically to farmers; lastly, that it should go a long way towards alleviating the timber shortage which we are already feeling and which will in a few years become acute if prompt steps are not taken to prevent it. The large size of the appropriations will probably be urged against it but it should be remembered that the appropriations made in the past for these purposes have been wisely expended for the public good and not squandered in pork barrel projects. From the farmer's point of view federal appropriations which are not raised from land taxes are more desirable than state taxes generally raised from the land.

Fruit Growers Cooperate with M.A.C.

THROUGH a plan recently adopted by which fruit growers of Michigan will help plan the experiments of the Michigan Agricultural College station along horticultural lines, the college has launched upon a new research policy which may have widespread results if applied to other agricultural problems.

Details of the plan were discussed recently at a meeting in Grand Rapids, where, at the invitation of Prof. C. P. Halligan, head of the M. A. C. horticultural department, members of a committee appointed at the recent meeting of the Michigan Horticultural Society convened. Men present were: Chairman C. E. Buskirk, of Paw Paw, representing the grape growers, Geo. Friday, of Coloma, small fruit growers; Robert Anderson, Covert, peaches and plums; H. Blakeslee, Fennville, and Harry Rackman, of Northville, apple growers; A. J. Rogers, Beulah, northern Michigan cherry interests, and in an ex-officio capacity, President G. A. Hawley, of Hart, and Secretary

T. A. Farrand, M. A. C., East Lansing

A series of tests with grapes and small fruits will be made near Paw Paw and Benton Harbor to determine the kinds and amounts of fertilizer that should be applied and an endeavor made to settle the controversy between grape growers as to the numbers of buds to leave under different conditions of vigor for the production of the succeeding season's crop.

Extensive experiments will be carried out on the Graham Experimental Station near Grand Rapids, to test and compare such sod mulch crops as alfalfa, clover and non-leguminous grasses with cultivation for apple and cherry orchards and also to determine which cover crop returns the most

humus to the soil. Experiments will be conducted to determine the best time to apply nitrates to peaches and the effect of fertilizers supplementing some of the cultural treatments will be studied.

Because of the general disagreement among apple growers as to the amount and kind of pruning young trees should receive, one experiment at the Graham station and another near Grand Rapids are designed to throw light on this question. An attempt will also be made to force biennially bearing apple trees into annual fruit production through pruning and fertilization.

Further comparative testing of dusting and spraying on all kinds of fruits will be done all through the fruit belt.

Attempts will be made to develop cheaper, more efficient and more adaptable dusts and spray materials with better spreading properties.

That the committee will be a valuable asset to the department and the fruit interests of the state was clearly demonstrated at the first meeting. Nearly every experimental project presented was thoroughly discussed and seldom did the proposals escape alteration for the better.—F. W. H.

WHEN SHOULD WE SELL WHEAT?

(Continued from page 373).

ber of instances which indicate that the present statistical position of wheat is a strong one.

Will wheat prices advance during the spring of 1921? They have held up much better than most other farm products as a result of heavy foreign buying. But unless the statistical strength of the market for this cereal should prove to be a snare and a delusion the price of wheat in May is very likely to be higher than in March.



Use a Strong Dormant Spray

By L. B. Reber

THE dormant spray is a spray applied some time after the leaves have fallen in the fall and some time before growth begins in the spring. In other words, while the trees are dormant it may be applied any time during the dormant period. Late fall is a very good time for application as we avoid the usual spring rush. Early spring will do as well, or we may apply the spray during the winter if a warm spell insures the spray against freezing upon the tree before it dries. The general practice is to apply it during early spring.

The dormant spray is a contact spray, that is, it kills by coming into contact with the insect or fungous. It is not intended for biting, but for sucking insects. The San Jose scale is the most prevalent and the most injurious of this class of orchard pest. If it is present in small numbers, you may recognize it by small, reddish, discolored spots on the tender bark. If present in large numbers, the bark has a crusty appearance. If uncontrolled, San Jose scale will kill the largest tree in from two to four years. It will wipe out the currant and gooseberry patch in a short time. Its presence causes the fruit to become knotty, unshapen, rusty and practically worthless. It attacks trees of all kinds and is sure death if left alone. Only the dormant spray will control it, as we dare not use summer sprays strong enough to kill scale efficiently.

The aphid is controlled by the dormant spray. Aphid eggs are laid in great quantities on the twigs and the young lice hatch out just as the buds open. Aphid is the cause of the dwarfed, misshapen apples so often found. They cause the young leaves to curl and eventually die. If the dormant spray is applied in sufficient strength it kills the eggs.

The dormant spray kills the fungus which is responsible for apple blotch. Summer sprays are almost wholly poison sprays intended for biting insects. They are of some aid in controlling fungus but cannot wholly control it because we dare not make them sufficiently strong.

To sum up, then: The dormant spray controls San Jose scale, oyster shell scale, all the scales of minor importance, aphid, pear psylla, apple blotch and various other fungous growths which disfigure fruits. In one sense it may be called life insurance as the trees will become worthless if it is not applied. It also controls anthracnose on raspberries and blackcaps. It must be applied during the dormant period as it is used in strength sufficient to burn foliage.

Commercial lime-sulphur is generally used for this spray. It should be used strong for dormant spraying.

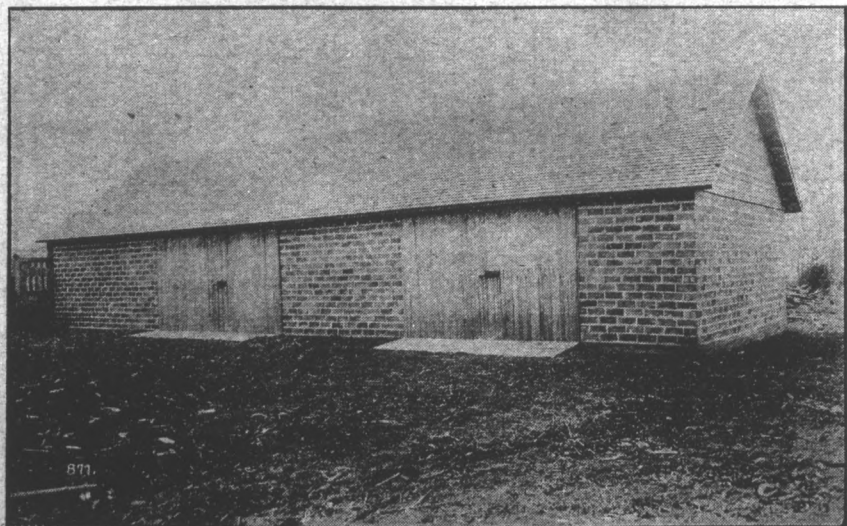
Observation and actual practice have convinced the writer that a weak solution for this dormant spray is time and money thrown away. Use one part lime-sulphur solution to about eight parts water. Remember that the San Jose scale is literally a hardened robber. He carries protective armor on his back. The spray must be strong enough to penetrate this armor. Aphid eggs are protected by a comparatively hard and varnished case. To clean them up use spray strong. The fungoids are very tenacious of life. Kill them with a strong solution. Miscible oils are also used for this spray with good results, especially on apple and pear trees.

One or two cautions: do not use lime-sulphur solution for any spray on grape vines. Grapes do not need a dormant spray and lime-sulphur in summer spray for grapes is injurious. Do not attempt to use a dormant spray solution after growth starts.

FIRST BEAN LABORATORY IN MICHIGAN ESTABLISHED.

THE farm bureau program for 1921 carries a tentative arrangement with the United States Department of Agriculture for the establishment of a bean laboratory in Saginaw. There is great need of controlling the diseases of the bean crop, since the past season showed a tendency toward increase of blight, root rot, anthracnose and other diseases which, if allowed to continue, may undermine one of the important crops of this county. The county agent arranged with the department of agriculture for the establishment of a laboratory for the purpose of studying bean diseases exclusively. The plan is to have two or four farmer cooperators in every township grow from one to three acres of different varieties of beans under the direction of the farm bureau inspectors and the department of agriculture.

These cooperators will be furnished with several varieties which are believed disease resistant, and these will be studied during the growing season by experts in charge. There will be one plot located somewhere near the city, which will be owned by the farm bureau and the United States Department of Agriculture, where certain tests and perhaps inoculation of the bean plant of the different diseases, will be made. This plan will give the farm bureau a splendid opportunity to learn more about the disease-resistant varieties, and at the same time plan out control measures through the growing of disease-free and disease-resistant beans. The diseases to which particular attention will be paid are the bacterial blight, anthracnose, mosaic, rust and root rots. J. C. MILLS.



Mr. Sherman Constructed His Machine Shed of Hollow Tile.

WOOD PRESERVATION

A timely talk in the interests of timber conservation on the farm



Senator Arthur Capper
© Beidler, Chicago

"Preserve—Conserve" urges Senator Capper of Kansas

"Those two words are weighty with meaning to every citizen of the nation. It is necessary that we save and take care of what we already have."

"This is especially true of the lumber resources of the nation. Our timbered areas are being rapidly depleted. We must replenish them. But first it is important that we make the best use of the timber we already have. Not a stick of it should be wasted."

"Wood is so closely linked with every activity of modern life that it would seem impossible to get along without it. Yet we face that possibility. Much wood is allowed to decay needlessly, on farms, in cities, in every industry."

"There are many methods of preserving wood, practically doubling its life and service. These methods are not expensive when the good they accomplish is considered. They should be employed by every person using wood, not only for the benefit of the individual but for the good of every citizen."

\$350,000,000 Lost by Farmers Annually

This stupendous sum—\$350,000,000—is a conservative estimate by experts, of the yearly loss which wood decay inflicts upon the farmers of America.

And part of that loss is coming out of your pocket.

If you doubt it, take a look at your farm buildings. Note how decay is weakening the foundation timbers, sills, joists and flooring of your barn and outbuildings! See how it is eating away the lumber in your porches, walks, cribs, hog and poultry houses—your hay-racks, silos, shingle roofs, fence posts and fencing!

The cost of practically all repairs to farm buildings, fences and implements can be charged to wood decay. Wood doesn't wear out—it rots out.

Decay is Natural, but Not Necessary

Stated in plain English, the scientific explanation of wood decay is simply this: Wood destroying fungi are tiny plant organisms so small that, individually, they can be seen only through a powerful microscope. In appearance, decay is a sort of mould, or mushroom growth. Sometimes the wood becomes "punky." To thrive, fungous growths must have air, warmth, moisture and food. Their food is the wood itself—they literally eat it up. These organisms develop most rapidly where wood is subjected to excessive dampness. That is why foundation timbers and fence posts rot away so quickly where they come in contact with the ground.

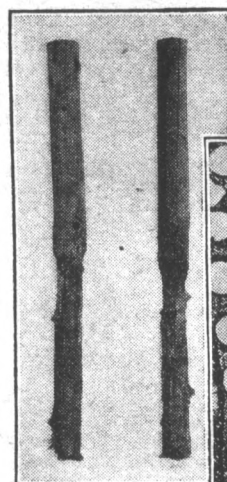
While wood decay is a natural condition wherever timber is exposed to air and the normal heat and moisture of the atmosphere, it is by no means unavoidable. Like any other infection—and decay is nothing more nor less than infection—it can be prevented or at least greatly retarded.

The Proved Remedy

The only successful method is preservative treatment with coal-tar creosote oil.

In the past, the big obstacle to the practice of wood preservation on the farm had been the difficulty of obtaining a proper wood preservative for home treatment.

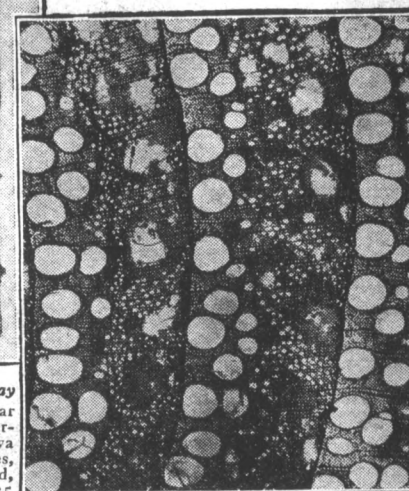
Fortunately this obstacle has been removed. The development of Carbosota Liquid Creosote Oil now brings the money-saving benefits of wood preservation within easy reach of every farmer.



All the eye can see of decay
Untreated white cedar posts after 9 1/2 years service. (Courtesy of Iowa State College, Ames, Iowa.) If carbosoted, they will easily last 25 to 30 years.

Standard for Non-Pressure Treatments

Carbosota is recognized as the standard wood preservative for all non-pressure methods of application—brushing, dipping, spraying



What the eye can't see

This photomicrograph shows fungous growths within the cells and structure of the wood that cause decay. The cross section is of three annual rings of chestnut greatly magnified. The small lighter areas or spots are decay pockets. (Courtesy Dept. of Wood Technology, N. Y. State College of Forestry, Syracuse, N. Y.)

and the Open-Tank process. It conforms to Government requirements.

Makes Lumber Cheapest Building Material

The life of wood can be doubled—often trebled—by preservative treatment with Carbosota Liquid Creosote Oil. This reduces repair and replacement costs, and makes lumber once more the cheapest of all building materials.

Send for Free Booklet

The questions, *how* and *what* to carbosote, are fully answered in our booklet, "How to

Make Farm Timbers Rot-Proof," a copy of which will be sent free on request to our nearest office. You should also consult your County Agent and State Agricultural College. They will be glad to help you.

Carbosota is sold by the leading lumber dealers throughout the country in one- and five-gallon cans, also metal drums. If your dealer does not carry it, write to our nearest office, and we will see that you are supplied.

The Barrett Company

New York	Chicago	Philadelphia	Boston	St. Louis	Cleveland	Cincinnati
Pittsburgh	Detroit	New Orleans	Birmingham	Kansas City	Minneapolis	Dallas
Nashville	Syracuse	Seattle	Peoria	Atlanta	Duluth	Salt Lake City
Bangor	Washington	Johnstown	Lebanon	Youngstown	Milwaukee	Toledo
Columbus	Richmond	Latrobe	Bethlehem	Elizabeth	Buffalo	Baltimore
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Criticizes Farm Bureau Methods

Congressman Gould, of New York, Threatens to Limit Activities of County Agents

By E. E. Reynolds

A RESOLUTION aimed to put a curb on the American Farm Bureau Federation's grain marketing program was introduced in the last session of congress on March 3, by Congressman Norman J. Gould, of New York. The resolution resolves that whereas the production and distribution of the nation's food supply is a matter of primary importance to every citizen of the United States; that any combination, contract or agreement to restrict the production of foodstuffs or to unduly enhance their price by combination, collusion, or other unlawful act would work a cruel hardship upon our people, and whereas declines in agricultural products have excited the fear and anxiety of our farming population and may cause them to be misled into the hasty adoption of plans or the formation of associations purported to provide a means of protection against loss, but actually discouraging production and arbitrarily establishing and sustaining the price through means ultimately injurious to both producer and consumer, be it resolved that the committee on agriculture of the house be instructed to make inquiry into the nature of actual and proposed agricultural organizations which are in whole or in part receiving appropriations, directly or indirectly, from the treasury of the United States, and whether or not such organizations, or their officers or agents have proposed or are undertaking to establish, maintain, or control the price of food products through associations, combinations, contracts, agreements, or otherwise. It is further resolved that the committee on agriculture shall report its findings to the house, together with such recommendations as may be necessary to protect the public interest and provide unhampered food production, and further to recommend such congressional action or executive action as may remedy any existing condition if such be found requiring legislation, or the prosecution of any individual, organization, or corporation appearing to be engaged in the establishment or operation of unlawful combinations or conspiracies to restrict the production of foodstuffs or artificially enhance the price of the same.

IN explanation of his resolution Congressman Gould has issued a statement in which he says: "Certain facts tending to show that an effort is being made by certain farm organizations to restrict the production of foodstuffs which were developed before the recent hearings of the banking and currency committee of the house led me to investigate the situation more fully. I find in a magazine published in this city a very comprehensive article concerning the activities of the American Farm Bureau Federation in this particular direction. Nothing could be more dangerous to the country than the arbitrary restriction by any organization of farmers of food production for the purpose of increasing prices. It is not merely economically unsound, but it is absolutely dangerous to the health, well-being and prosperity of the country."

"There appears to be no doubt that the American Farm Bureau Federation is committed to such a policy. It appears that what is known as the Farmers' Grain Marketing Committee of Seventeen of the American Farm Bureau Federation, in session in Kansas City in February, recommended the

adoption of a grain marketing plan and this Committee of Seventeen substantially intends that the members of the American Farm Bureau Federation shall control not merely the marketing of grain, live stock and dairy products, but shall control the amount of production. No committee and no organization should be in a position to control the grain crop of the United States.

"Such action by the American Farm Bureau Federation is particularly antagonistic, when it is known that the county agents of the department of agriculture are—and I quote the president of the American Farm Bureau Federation—the keystone of the federation. Mr. Howard insists that 'the county agent is the strong right arm of the American Farm Bureau Federation.' This county agent receives one-half of his salary from the department of agriculture and the other half from the state agricultural college, being a combination state and federal officer, paid from the taxes received by the federal government and state governments. If this county agent is to use his influence and power for the purpose of restricting the production of foodstuffs, I believe that these county agents should immediately be detached from the federal payroll."

Congressman Gould also objects to the "attempted dictation to congress by the American Farm Bureau Federation in the matter of legislation." "Heretofore," he says, "such dictation has invariably been attempted by the American Federation of Labor, but now we find this American Farm Bureau Federation attempting the same tactics, and this American Farm Bureau Federation, it must be remembered, has as its nucleus county agents paid out of federal funds and out of federal taxes. Nothing will produce discontent, unrest, and even bolshevism quicker than an attempt to limit the food production of the United States, boost the prices and compel the people to pay double what they ought to pay for their food. I shall insist upon this investigation in the next congress, and I shall continue to act until this conspiracy against the people is ended. We can at least divorce those who inspired this conspiracy from the public payroll."

COMMENTING upon Congressman Gould's resolution and statement, Gray Silver, Washington representative of the American Farm Bureau Federation, says:

"All congressional investigations of farm organizations conducted in a fair-minded way and with a view to securing all the facts, will be welcomed by the American Farm Bureau Federation, and every effort made to assist in any way possible. The American Farm Bureau Federation has no secrets and operates entirely in the open. It is built upon the voluntary membership support of a million and a half forward-looking farmers who are endeavoring to improve agricultural conditions and increase production through cooperation and coordination of efforts along lines consistent with permanent production. This is a privilege and a right open to every citizen of the United States and further investigation of the federation can only serve to convince larger numbers of its solid basis and its sincerity and integrity of purpose. Neither the federation nor the Committee of Seventeen has adopted any policy of limiting production or fixing prices."

"All who are well informed and intimately acquainted with the organization and functions of the local County Farm Bureau units, fully understand the relationship of the county agricultural agent to the farm bureau. They know that the farm bureau is the only organization which universally supports and makes effective the work of the county agent in his endeavors to increase production. They know that the duties of the county agent are prescribed by law and that the county agent observes the law. They know that the duties of the county agent are entirely separate and distinct from those of the farm bureau officers. And finally they know that instead of using government funds to support the farm bureau the farm bureau contributes heavily to the county agents' financial support, and uses its own funds in carrying out educational demonstrations. Any attempt on the part of congress to interfere with the legitimate functioning of the county agricultural agent would react to the detriment of both the consumers and the producers."

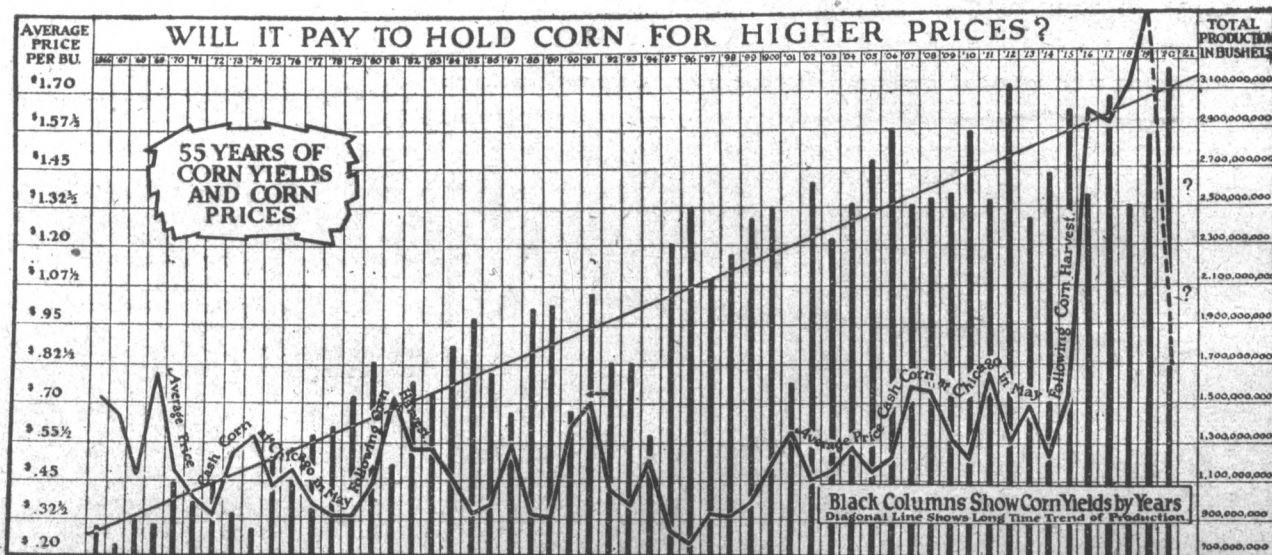
In an address before the Southern Commercial Congress, Milo D. Campbell, of Michigan, president of the National Milk Producers' Association, declared that "American agriculture at this hour is in the slough of despondency, and with but slight encouragement, other than benevolent words, from congress and the powers in charge of our governmental affairs.

"More than one-third of the nation consists of food producers. Without them the people of the cities would starve. And yet this army of protectors finds here in Washington out of five hundred and thirty senators and representatives less than a dozen from their calling. During the last session of congress, there have been thousands of pages in the Congressional Record devoted to condolences, to eulogies of the farmer, to prepared epitaphs for the tombstone over his dying hopes, and not five lines of legislation have been written for his relief."

"The greatest camouflage arrangement that any parliamentary body of the world possesses, and through which the adroit and oily congressman can be all things to all constituents consists of the fossilized inheritance rules, by which senators and congressmen retain their committee places from session to session, provided their own constituents send them back. No matter what national view they may have, no matter whether their sentiments are responsible to the sentiments of congress there they sit by primogeniture in a national capacity representing less than one-fourth part of the people of the United States. By custom they are also appointed upon conference committees with the other coordinate body."

"In just such a cemetery there sleeps today the measure known as the Volstead bill, giving to farmers the right to cooperatively sell their own products. Two or three men in the United States Senate stand over its grave, both defy and deny thirty-five millions of farmers the relief for which every farm organization has asked and which was promised them by both of the great political parties in their last national campaign."

"We have consideration for the difficulty that confronts congress in giving to important matters earliest attention, but when we find every potential relief to farmers denied them, every important measure upon which their hearts have been set, tied in covert by inside rules and steering committees, by party whips, into whose presence a farmer cannot and dare not enter, we note with what ease and legerdemain the buck can be passed by sending bills to the dormitories of these hostile committees. Better would it be for the farmers of the country and for all industry, if congress were open-faced where its real sentiments could be expressed or known."



This Graph Shows the Reader the Relation Between the Yields of Corn for the Past Fifty-five Years and the Prices Paid in May Following the Harvest of Each Crop.

Cloverland Round-Up

Farmers of Upper Michigan have Big Program for Menominee Meeting

THE biggest meeting of actual farmers and persons directly interested in live stock production ever held in the upper peninsula is scheduled for March 29-30-31, at Menominee County Agricultural School, Menominee, Michigan. A big gathering of Cloverland farmers from fifteen counties of the upper peninsula and Northern Wisconsin.

This will give all classes of farmers and their wives an opportunity to hear the leading experts from the Michigan Agricultural College, the Wisconsin College of Agriculture and other noted authorities on the subjects of domestic science, farm crop production and live stock growing.

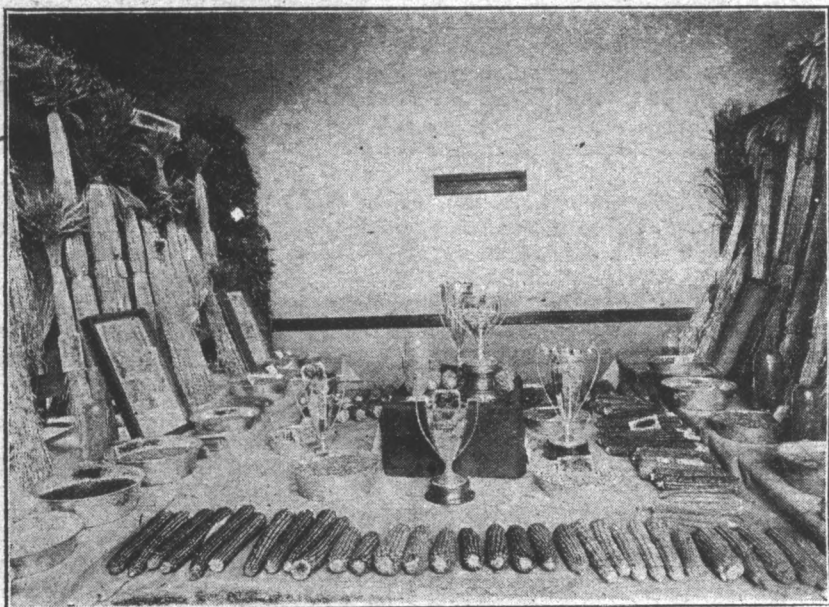
This big three-day institute will have sessions for both men and women, as has been customary in the past. The farmer's voice will be heard on every aspect of agricultural thought and practice at this meeting.

March 29, the first day of the insti-

and at Farmers' Week of the Michigan Agricultural College, on display at this institute. The school and interested business men of this section of the country offer eight silver trophy cups as an inducement to exhibit at the big grain and potato show to be featured. There will be a shoe display, bringing out the fact that Dame Fashion must take a back seat for Solid Comfort and Health.

Farm machinery companies will have their latest machinery on display. Baking powder and cereal companies will demonstrate and pass out samples and literature. The garment-making clubs of the rural schools of this section, will display their garments in an endeavor to win the trophy cup and sewing machine offered as prizes.

The local American Legion team is to play the Michigan Agricultural College Base Ball Team on the evening of March 29. The college team is a



Some of the Cups to be Offered.

tute, is to be called Farm Bureau Day and a large delegation of farm bureau men and women from all sections of the upper peninsula are expected to attend this meeting and hear state authorities discuss textiles, dairy and market problems.

March 30 will be general agriculture day and Dean H. L. Russell, of the Wisconsin University, a recognized authority on agriculture over the entire country, will be the main drawing card; but crops fertilizers and land clearing subjects discussed by prominent men in their lines, will also be a big feature for the men's session on that day. The women will be privileged to hear Dean Sweeny, of the Michigan Agricultural College, also nationally known as a leader of thought in the problems of farm women. Miss Helen D. Moore, of the Department of Public Health at Lansing, will also furnish interesting information on health problems to be met. Home demonstration agents will be on hand to demonstrate pattern making, fabric testing and to conduct a millinery clinic.

The last day, March 31, will be parents' and children's day, at which time pep speakers, moving pictures, club demonstrations will play an important part on the program. The moving picture, "Todd, of the Times," and also the one taken at the International Live Stock Exposition at Chicago, "The Visit of the Victors," are to be shown.

Many displays and educational exhibits will be featured. The Menominee County Agricultural School will have the big grain show featured at the International Grain Show, Chicago,

very fast team and a peppy game is expected.

New and refreshing milk drinks will be served between sessions and everything is planned to make this event the farmers' and housewives' convention of the upper peninsula and to give everyone a pleasant and profitable time.

VETCH FOR HAY.

Will vetch (fall vetch) sown with oats mature so as to make oat and vetch hay? Will the vetch live through the coming winter so as to make seed that year?

Kent Co.

R. T.

You can sow a mixture of sand vetch and oats early this spring and the vetch will mature sufficiently to make into hay. I doubt if you get the best results but it certainly will improve the quality of the hay by adding more protein to it. But if you want to raise vetch for seed you should sow it in September with rye. This then lives over the winter like rye, and matures sufficiently so that the rye and vetch can be harvested together the next season. This is the way practically all the vetch seed is produced. Special machinery separates the rye from the vetch.

Personally, I would prefer for hay this year, to mix Canada Field Peas with oats rather than with vetch. These will make full growth in the same length of time the oats do, and when cut at the proper time and properly cured it makes an excellent hay and on good rich land you can get splendid results.—C. C. L.

Drain off the old oil from Your Motor—Refill with fresh



En-ar-co

PETROLEUM PRODUCTS

MOTOR OIL

For Every Motor Use

Don't neglect to change the oil in your motor every so often; and "every so often" in an automobile means generally every 500 miles—never to exceed 1,000 miles. In a tractor, every third day at least.

This is the most important thing in the care of a motor. It's much less costly than repair bills and it's less annoying. When you drain off the old oil replace with kerosene and run your motor slowly for one minute, then drain and refill with En-ar-co Motor Oil. You'll find that your motor "feels" better and acts better—more "pep" and new life.

While it is true that the adding of new oil to the old from time to time, suffices to keep the motor running without a complete change of oil, it is not sufficient for proper lubrication. The old oil gradually grows thinner, carbon forms and accumulates, resulting in serious damages, and unexpected repair bills.

Oil—good oil—En-ar-co Motor Oil—is the smallest expense of any motor. This Scientifically Refined Oil in connection with White Rose Gasoline and En-ar-co Gear Compound will give you best results at the least expense.

Why En-ar-co Motor Oil is Better

All Motor Oils are made from crude petroleum — they all have the same starting point; but the difference comes in the stopping point.

The exacting care and scientific accuracy used in refining En-ar-co Motor Oil will not permit its "making" to stop until it has reached the very height of quality required of it. Possibly, for this reason, we do not get as much En-ar-co from a gallon of crude petroleum as we could, but you get a better oil. This is why En-ar-co will keep your motor remarkably free from carbon, engine trouble and repair costs.

EN-AR-CO Gear Compound

For Differentials, Gears, Transmissions

A grease of just the proper body and cushioning properties to prevent metal to metal contact.

White Rose Gasoline

Clean, Uniform, Powerful

National Light Oil

For Lamps, Stoves, Incubators, Tractors



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Enclosed find 2-cent stamp to partially cover postage and packing. Send En-ar-co Auto Game free. I have never received an En-ar-co Game.

My name is
St. or R. F. D. No.
Postoffice
County State
I own (Auto or Tractor)
My dealer
Located at cannot supply me. Quote prices on:
.....gallons White Rose Gasoline.
.....gallons En-ar-co Motor Oil.
.....gallons National Light Oil.
.....pounds Black Beauty Axle Grease.
.....pounds En-ar-co Gear Compound.
.....gallons En-ar-co Valve Oil.

Review of the Feed Markets

No Indications of Higher Prices at Present—By Sanders Sosland

MORE and more is heard of the possibilities of a spring bulge in feed prices. Such a course is not unusual for the feed trade, despite the ripening of pastures in many sections of the country which permits material curtailment of buying. The rise in prices is influenced more by the slackening movement of commodities from the country incident to spring work in the fields. The seasonal trend of cattle, hog and sheep prices during spring is upward, and this exerts a bullish influence on corn, other coarse grains and feedstuffs. Some feeds, however, follow a declining tendency, particularly those which suffer the sharpest contraction in demand resulting from the use of pasture. Alfalfa, prairie and tame hay rank in the latter group.

The trend of the market for various feeds in recent weeks has not offered any signs of an upward movement of values. Instead, declining prices, in some instances sharp, have occurred during the past month. Bran and shorts are selling on a basis about \$3 to \$4 a ton lower than a month ago, alfalfa hay has declined an average of \$5 a ton, the high protein feeds, including cottonseed cake and meal, are as much as \$2 a ton lower, and the coarse grains have fluctuated irregularly, tending slightly downward most of the time. The commercial mixed feeds also are lower, at least the declines in the raw products justify recessions.

Those who are bullish on the feed-stuffs outlook place much hope in the improved position of the corn market. They see a material and possibly a sharp contraction in the movement of the coarse grain from the country, which at no time on the crop has reached a volume commensurate with the size of the harvest. Pressure of renters' corn is now practically out of the way, settlements in most sections of the country having been completed on March 1. Incidentally, there is less pressure, too, from producers who have been selling to escape the annual tax assessments. Almost without exception marketings of corn show a falling-off after the January and February run is at an end. Other influences restricting the movement, including the rush of spring field work, are the prospects for a large pig crop over the important hog and corn-producing sections and the relatively attractive position of pork animal prices, which is stimulating use of the coarse grain.

The Feeding Demand.

Along with the expectations of a smaller movement of corn from the country, feeders are displaying more and more interest in the offerings on markets and an enlargement in the feeding demand is probable before the approach of summer. Whether the feeding demand will be up to normal, however, is a question, owing to the abundance of other feeds in the country. But the trade which is favorable to the buying side of corn maintains that the coarse cereal is relatively the cheapest feed and that by its use as a substitute for other commodities the demand will again reach a large total. There is already considerable buying between farmers, but the feeding demand for corn on markets is still of a negligible volume. In view of the fact that stocks of the grain are the largest in more than five years and one of the largest on record for this season, about twenty-three million bushels, there is need for heavy buying by the feeders. Cash corn is selling around

sixty to sixty-eight cents a bushel in Chicago at this writing and around fifty-six to sixty-five cents at other middle west markets.

The Prospective Pig Crop.

More than passing consideration must be given the prospective crop as an influence on corn, and on other feedstuffs as well. Relatively high hog prices in recent months have not been a material influence on the corn market because of the scarcity of stock and feeding pigs. This, however, will disappear with the approaching spring farrowing season, while the maintenance of hog prices around their present levels—there is quite general talk of material advances—will mean a strengthening of the position of the coarse grain. Meat animal producers

will probably not err in accumulating their spring and early summer requirements of corn in the immediate future.

The Oat Market.

A relatively broader feeding demand has been felt in the oat market than in corn, though the minor cereal's fluctuations have been almost entirely in sympathy with the action of the leading feed grain. The south has bought more freely with the approach of spring, yet there is more or less disappointment over the volume of oat business with that territory. No other section in the United States has suffered to the extent of the south from the commodity price depression of recent months, the extreme weakness of cotton being reflected in a serious lack of credit in that territory. Incidentally

the lack of buying power by planters of the south has been and continues to act as a powerful check on bullishness in prices for all feeds. Farmers have sold oats quite freely, their surplus stocks still being considerably larger than normal for this season. Oats are bringing around forty to fifty cents a bushel on middle west markets, including Chicago. Spring field work is usually a stimulant for buying oats, which probably will be reflected in prices.

The Millfeeds.

Bran and shorts have undergone recessions, probably marking the end of the readjustment process for six weeks or two months, that is, until the trade begins to discount the opening of the new crop year. While hardly on an attractive basis yet, both the light and heavy offals, which are selling at the lowest level in more than five years, are now in a position to compete easily with competitive feeds. On western milling markets, including Minneapolis and Kansas City, bran sold below a dollar per hundredweight within the past month. Prices have since strengthened, being around \$21.50 to \$22.50 a ton in Minneapolis \$20.50 to \$21.50 in Kansas City, \$23 to \$24 in Chicago and \$24 to \$25 in St. Louis. Minneapolis was quoting around \$26 a ton for bran a month ago, with other markets on a freight differential.

Since the recent dip in prices, brown and gray shorts have strengthened relatively more than bran. Minneapolis quotes flour middlings or gray shorts around \$25 a ton and \$22 to \$22.50 for brown shorts, with the Kansas City market around \$22 to \$23 for gray and \$21 for brown. Red dog, or a very low grade flour, is bringing around \$32 a ton on both markets. St. Louis and Chicago prices are holding around \$26 to \$27 a ton for gray shorts. The heavier feeds will broaden the premium over bran for the next few months if past years' experience may be taken as a barometer. Owing to enormous needs of hog producers for shorts in feeding pigs, this wheat offal ordinarily rises more rapidly in price than bran. A year ago the differential between bran and shorts amounted to about \$20 a ton at this season. A differential of \$5 a ton is probable this year. The millfeed situation does not offer extremely bullish prospects, owing to the outlook for a moderate enlargement in the production by mills and because of the hesitancy among buyers in accumulating stocks. Still there is enough hand-to-mouth buying by hog producers and dairymen in the central states and middle west, as well as the south and southeast, to absorb the output of mill, with the result that stocks are not accumulating in commercial channels. A spurt in buying by hog feeders will therefore be felt as a bullish influence.

The Commercial Feeds.

With only a meager demand from foreign countries and an almost general lack of interest in offerings on the part of fertilizer manufacturers and commercial mixed feed interests, more or less difficulty is being experienced in sustaining prices for cottonseed cake and meal. The domestic feeding demand is of moderate proportions, having increased slightly in recent weeks in anticipation of heavier spring requirements. But even the domestic business is of smaller than normal volume for this season. One of the influences making for strength in the cottonseed feed market is the fact that stocks of the high protein products in hands of crushers are mate-

(Continued on page 403).

A Study of Timothy Prices

IT is calculated that the United States grows about 15,000,000 acres of timothy alone, and 20,000,000 acres of timothy with clover which is presumed to necessitate the use of around 200,000,000 pounds of seed annually.

There are no official estimates upon timothy seed production, but the supply usually is ample enough to supply domestic needs and supply a certain quantity for export. The price is somewhat erratic, depending upon the price of hay. High prices for hay usually result in high seed prices during the following year because less is cut for seed and there is a bigger demand because of the effort to increase acreage.

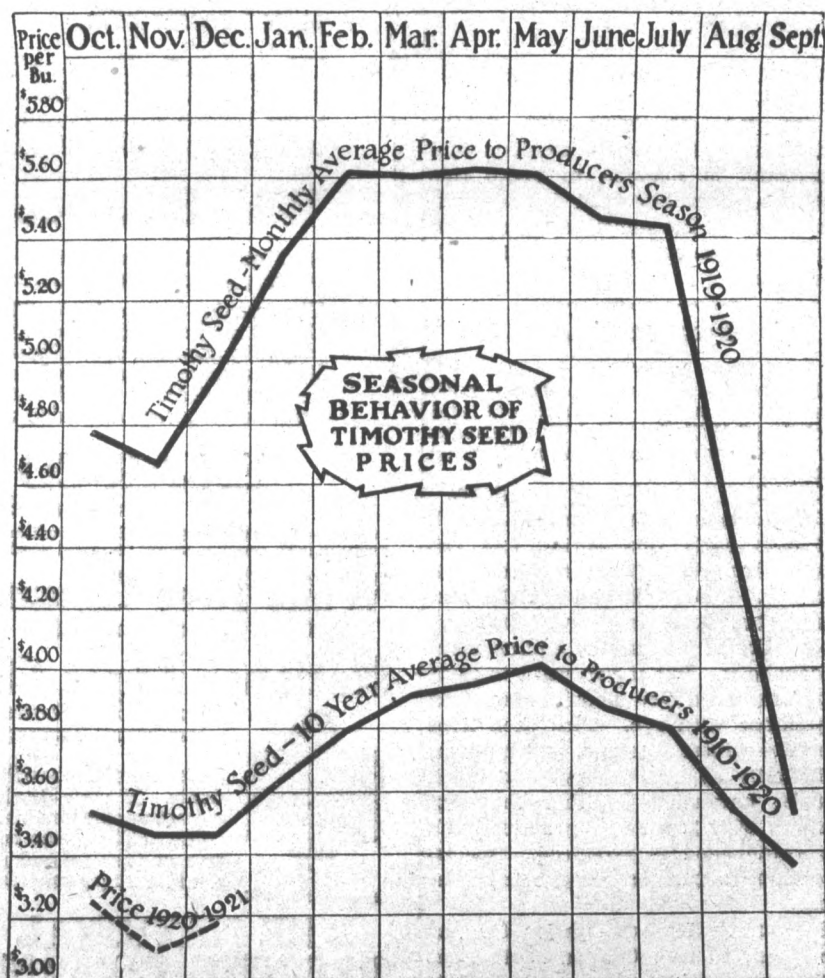
Timothy seed did not attain a very high price during the war period. An exceedingly large crop was produced in 1916, while high prices for feed crops reduced the demand for grass seed. Prices for the 1919 crop were

high, but not so high as upon the 1911 crop.

This year's crop is known to be large and much of it remains in farmers' hands. Exports are averaging slightly over 1,000,000 pounds a month.

Trade expectancy is that spring demand will be fairly large because of low prices for grains. However, hay prices are low and the outlook for hay producers is discouraging so long as present freight rates remain in force. This situation will be a partial offset.

Prices as shown by the chart are below the average of the preceding ten years. Usually there is an advance during the spring months. Whether it will occur during the coming spring is the question puzzling both buyers and sellers. If sellers become anxious to unload the market might weaken, while an abnormally large demand cause a big advance.—G. GUSLER.



PRICES to producers are averages for the entire country as determined by the department of agriculture. The average price line has advanced gradually from December to May and then declined again. The 1919 crop sold for above the ten-year average price, but the sharp decline since last July reduced values to about forty-five per cent to a point below the ten-year average where they now are.

Did You Buy "Separators" or Insulation?

When you bought your battery it had either separators or *insulation* between the positive and negative plates.

If you were battery-wise enough to buy a car with a Willard Threaded Rubber Battery on it, that's all you *need to know*.

If you bought one with ordinary wood separators you will find out that there is an important difference between "separators" and "insulation," and the news may come in the form of a sudden breakdown

that leaves you with a bill to pay for having those separators replaced.

Most of the cars with wide reputation for quality use the Willard Threaded Rubber Battery—the battery with *insulation* that outlasts the plates. The complete list—174 makes of cars and trucks on which Willard Threaded Rubber Batteries are standard equipment—is published in Willard national advertising, or can be had from any of the dealers below.

Go to the nearest dealer in your territory when you need a new battery, or authorized Willard Service.

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Battle Creek..... Central Sto. Batt. Co.
Bay City..... Thorne Elect. Co.
Benton Harbor..... H. L. Draper & Co.
Big Rapids..... Automotive Elect. Co.
Blissfield..... H. D. Bailey
Cadillac..... Cadillac Sto. Batt. Co.
Calumet..... Calumet Sto. Batt. Co.
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Charlotte..... Charlotte Sto. Batt. Co.
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Flint..... Flint Sto. Batt. Co.
Fremont..... John J. Hansel & Co.

Grand Haven, Kooiman Batt. Serv. Co.
Grand Rapids, Wolverine Sto. Batt. Co.

Greenville..... Elmer Wilber
Hamtramck..... David Berger
Hastings..... Universal Garage Co.
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Hillsdale..... Simpson & Simpson
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Cleveland, Ohio

This trade-mark tells you that the plates in your battery are *insulated*—not merely *separated*. Willard Threaded Rubber Batteries are selected by the best brains in the automobile business as standard equipment for 174 makes of cars and trucks.



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Virgin Wool Blankets At COST

Soft, downy blankets of virgin wool, free from shoddy. Not for a long time have you been able to get blankets like this at any price. Now you can get them at prices lower than those generally asked for inferior goods.

The ordinary "all wool" guaranty does not protect you. A blanket or piece of goods containing 100% shoddy may be sold as "all wool"; but it is second-hand wool, with all the best wear gone. "Virgin wool" wool that has never been used before—is the only assurance of full wear and value.

These blankets are made from virgin Michigan-grown wool by mills under contract with this Bureau. We are interested only in providing a market for the wool produced by Michigan farmers; in distributing the maximum number of blankets, not in making a profit on the blankets themselves. It presents an unusual opportunity for you to buy the best blankets at a low cost. If you are not satisfied fully, we will gladly refund your money. For those who desire a softer blanket, some are made with cotton warp.

The Aurora double, pure virgin wool in blue and white, tan and white, gray and white plaids is 72x34 inches, weight 5½ pounds with a neat lockstitch binder. Price **\$9.50**

The Illinois single, made expressly for people who require a little softer blanket. It is 66x34 inches and contains 75 percent virgin wool with 25 percent cotton warp and is suitable for a bed blanket or an auto robe. Price **\$6.50**

The George Washington, a choice, natural, light gray double bed blanket with a rich brown, blue or pink border, size 72x84 inches, weight 5 pounds. Is bound with white Soisette ribbon. This blanket is pure virgin wool, except the warp. **\$9.50**

Buy From Your Own Association.
Wool Department

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Do you know that you can obtain more health, pleasure and profit from a garden of strawberries and raspberries than from any other equal amount of land on your place? My beautiful new Catalogue greets you with a smile, and tells you something about ourselves and our favorable location where soil and climate combine to produce plants of superior quality. It tells: **How** to select varieties best adapted to your soil and needs. **How** to prepare the soil for planting. **When** to plant. **The different** systems of small fruit growing. **How** to plant. **How** to care for the patch. **How** to pick and market the fruit so as to obtain the highest prices. **How** to renew the patch. It is a **Fruit Grower's Guide** and whether you buy your plants of us or not you will need this helpful book—"Nevins Success with Small Fruits." Send for your copy today. A postal will bring it.

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Berry Baskets

We have—



A grade wood baskets. The best wood quart basket made.

Waxed paper baskets. Made of a heavy paraffined paper. Will not split or warp. Fine for the home market and moderate in price. A neat, clean package.

16 quart crates in flat. A well made crate of good material taking either kind of basket. Buy now. Our price list for the asking.

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STRAWBERRY PLANTS

Good strong, well rooted plants at \$4.00 and \$5.00 per thousand. Also a complete line of the best red and black raspberries, hardy blackberries, fancy gooseberries and currants, a large stock of popular grape vines. Many of our customers are making from \$500.00 to \$1200 per acre growing berries from our fruit plants. Send for our free catalog.

BRIDGMAN NURSERY CO., Box 9, Bridgman, Mich.

EVERBEARING STRAWBERRY
Our free Catalog describes and illustrates a full line of choice small fruit plants. SEND FOR IT.
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200-Progressive pedigreed everbearing strawberry plants \$1.50 postpaid, 1000 \$5.00 not prepaid. Mason Nursery Co., Piedmont, Mo.

Strawberry Plants Red and Black Raspberry plants write for price list.
GEO. B. OWENS, Box 353, Leslie, Mich.

Grape Vines Strong thrifty, best varieties. Buy of me and get what you order 60 cts. each \$30 per hundred post paid.
JOHN J. KIESLING, St. Johns, Mich.

Wolverine seed oats bred at M. A. C. 50 cents per bushel, including sacks, sample sent on request.
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Registered Wolverine oats high yielding excellent quality 75c per bu. in 25 bushels.
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Michigan Agricultural News

PLAN ON SURPLUS MILK OUTLET.

THE officers and directors of the Michigan Milk Producers' Association have been for some weeks quietly working out a plan by which the surplus milk problem in the Detroit area could be eliminated. This plan was suggested at the delegate meeting held at Detroit in January, and its present development is along the general lines announced by President Hull at that time. Since that date the board of directors of the producers' organization have gone into the matter more carefully, and appointed a committee to visit the model plant maintained by the Dairy Division of the United States Department of Agriculture at Grove City, Pa., to study the methods used there and the price gotten for the milk used in manufacturing the products made there, which include Swiss and Italian cheese of a quality which fills the place of the imported article in our markets.

Pursuant to this study of the problem a general meeting was called at Detroit on Friday of last week, which was attended by about two hundred and fifty dairymen representing the various local units in the Detroit area. The favorable report of the committee was supplemented by Mr. Helmer Rabild, of the Dairy Division who was present at the meeting to explain the work done at the Grove City plant and give his views as to the manner in which such a plant could be made to serve the Detroit area producers.

Following the presentation of the proposition in all its details, the dairymen present approved the proposition by a practically unanimous vote. A committee was appointed for each county in the area to take up the question of financing the proposition with their membership and report to the board at a later issue.

The plan calls for the erection of a modern plant at some central point outside of Detroit, for the manufacture of various milk products, primarily as a means of caring for the surplus milk in the Detroit area. Practically, this plan, if successfully worked out will demonstrate the possibilities of solving the problem of dairymen outside the market milk area by similar means.

TO MANUFACTURE WOOL INTO CLOTH.

THE wool department of the State Farm Bureau is going into the clothing industry. It has announced that both ladies' and men's suitings will be made from virgin wool in the Michigan wool pool. The product will be turned out by a Michigan mill. This will not only give the farmer having wool in the pool an additional return on his wool through its sale as a manufactured product, but it will enable him to buy the finest in suitings from his own plant at cost—material absolutely free from shoddy. The wool department is now sending sample books to the county agents. Several other states of the American Farm Bureau Federation has engaged in the manufacture of suitings with marked success.

PROGRESS OF AGRICULTURAL DEPARTMENT BILL.

A BILL providing for the establishment of a department of agriculture, which was introduced by Representative Atwood, has been successively considered by the committees on state affairs, ways and means, and agriculture of the house.

Appreciation of the importance of this measure was manifest when the

house sidetracked over legislation to secure immediate passage of this measure. When it was reported by the agricultural committee on Wednesday the rules were suspended and the bill given immediate consideration by the committee of the whole. After being favorably reported by this body, the rules were again suspended and the bill put on its immediate passage on third reading. The roll call evidenced unanimous approval of the measure by a final vote of eighty-eight to nothing and given immediate effect. The bill was sent to the senate for their action.

The agricultural committee of the house made several amendments to the bill which will make the proposed department more truly agricultural in character. As a result of one of the amendments, the duties of the board of geological survey will not be taken over by the new department, but will no doubt be included in the work of the proposed department of conservation to which they are more closely related. The work of the present market director will be placed under the department of agriculture whose duties have been amended to include "the investigation and improvement of marketing conditions as now provided by law."

Fostering of direct trading between producer and consumer will come within the scope of the new department according to another amendment.

Harmony between the State Department of Agriculture and the other state departments is insured by the adoption of an amendment providing that "all the powers and duties imposed by this act on the State Department of Agriculture shall be exercised and performed under the supervisory control of the state administrative board."

The bill as now amended agrees almost exactly with the recommendations of the Michigan State Farm Bureau and its enactment into law by the present session of the legislature will be a great advance for the agricultural interests of Michigan.

LIVE STOCK EXCHANGE ELECTS OFFICERS.

THE first meeting of the newly elected directors of the board of directors of the Michigan Live Stock Exchange was held in Lansing, Thursday, March 3, when the following officers were elected: President, C. J. Miller, Union City; vice-president, E. R. Munson, St. Johns; secretary-manager, E. E. Compson, Lansing; treasurer, N. W. Stuart, Clarksville; recording secretary, George Boutell, Perry; farm bureau committee, E. A. Beamer, Blissfield; P. M. Granger, Charlotte.

HEARING ON STATE INCOME TAX LAW.

FARMERS of Michigan again effectively voiced their protest against present conditions of taxation and their united support of a state income tax when representatives of the various farmers' organizations of the state appeared before the house committee on revision and amendment of the constitution and on behalf of over four hundred thousand farm voters urged the passage of the McArthur, Mosier resolution to provide for the submission to the people of a constitutional amendment to allow for legislative enactment of a state income tax law.

N. P. Hull, representing the State Grange voiced the sentiment of the friends of the bill when he believed that an income tax was just and that it should be adopted in order to more equitably distribute the burden of taxation. Among others who pled for the

submission of this issue to the electorate were: Senator McArthur, father of the senate version of the resolution; J. N. McBride, representing the affiliated farmers' clubs, and Mrs. Dora Stockman, speaking for the farm women and children of Michigan.

Owing to the lateness of the hour representatives of the Michigan State Farm Bureau executive committee and legislative department yielded their time to O. F. Barnes, chairman of the board of state tax commissioners. Mr. Barnes, in the most comprehensive and authoritative speech of the evening, pointed out that we are operating under an eighty-year-old tax system which was framed to meet very different conditions than those which exist today. He asserted that three thousand million dollars worth of intangible property in Michigan pays no tax.

The forces opposed to a state income tax were represented by four very able speakers but were unable to meet the argument brought forward by the friends of the bill as to the justice of the proposed measure. These speakers were: Hal H. Smith, counsel for the Michigan Manufacturers' Association; Allen Reese, of the Calumet & Hecla Copper Company; Mr. Savage, of the Saginaw Manufacturers' Association, and J. Walter Drowdy, of Detroit.

MICHIGAN WELL ORGANIZED.

A GREAT many Michigan farmers are doubtless aware that their state is unusually well organized in the field of cooperative marketing, but probably few realize that the Michigan Agricultural College spends more money for the development of this movement than any other land-grant college in the country.

Proof of this fact is contained in the annual report of statistics of cooperative extension work recently issued by the United States Department of Agriculture. The amount set aside by M. A. C. for marketing is \$14,700, easily the largest in any of the thirty-three northern states included in the same classification. Massachusetts is next with \$10,425, Missouri is spending \$8,440, Iowa \$8,100, Nebraska \$5,200, New York \$5,440, and Ohio \$3,700. In Wisconsin no budget is set aside strictly for marketing, but even under dairying where practically all market activities in the state are centered the amount listed is only \$13,810.

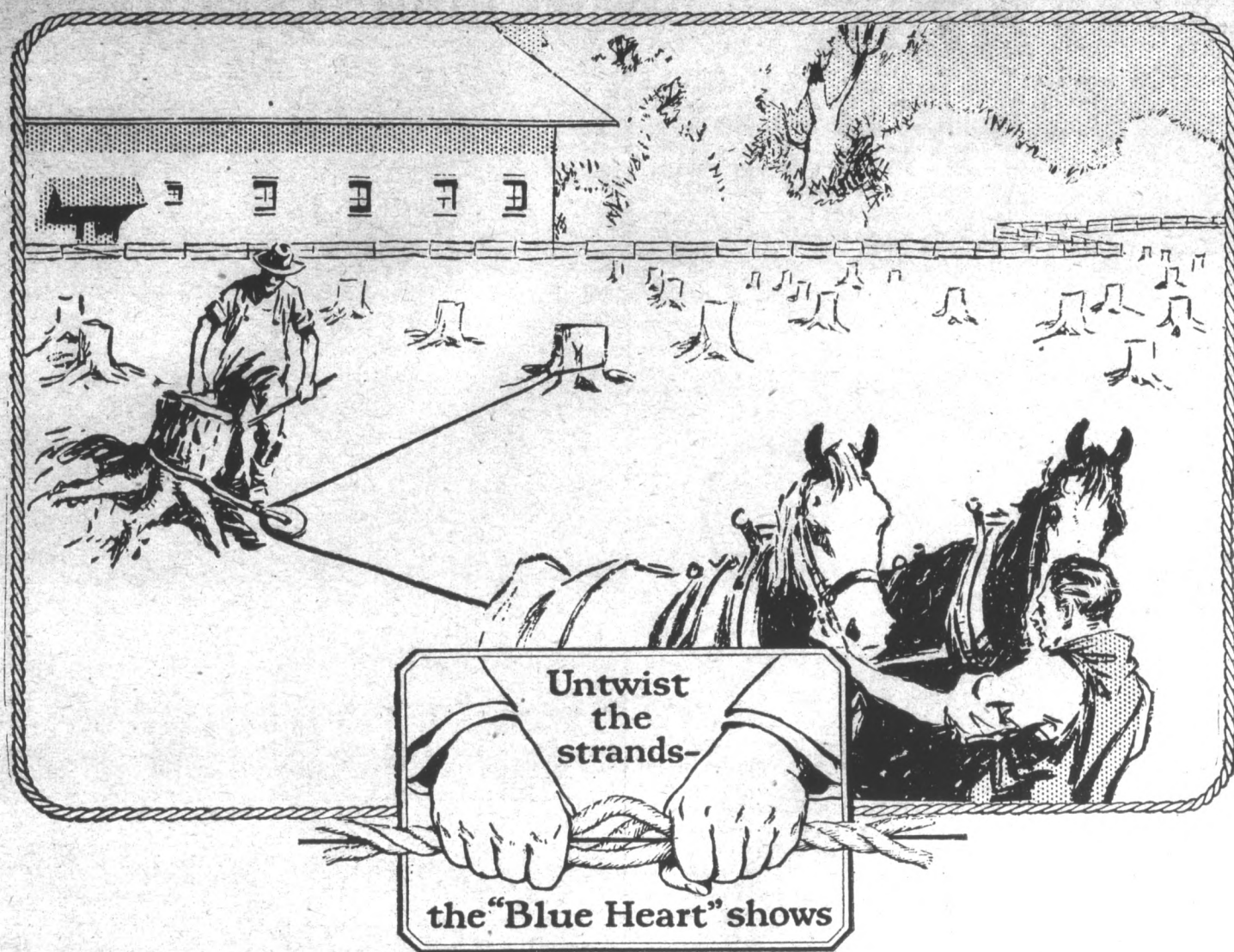
SELECTING BIRDS.

VITALITY and vigor are of the highest importance in selecting birds for the spring breeding pens, declares C. H. Burgess, head of the poultry department at M. A. C. None that has been sick during the year should be chosen, while on the other hand, those with red combs and lustrous feathers, which sing or crow often, are pretty sure to be desirable.

Breeders should be penned by themselves and fed generously upon grains, both whole and ground. "Give them green food," he says, "and sour skim-milk. Feed grain in deep litter. Make hens in breeding pen work, if possible, giving them free range. Eggs should be gathered often during the colder days of spring and kept in a temperature that is less than sixty degrees F., but not below fifty degrees. Turn the eggs often."

The breeding pens should be made up during March if the work has not already been done, says Professor Burgess.—F. W. HENSHAW.

To improve the golden moment of opportunity, and catch the good that is within our reach, is the great art of life.—Johnson.



Here is the rope for your heaviest pulls

**H. & A. "Blue Heart" Manila Rope
is guaranteed for excess strength**

WHEN your heaviest team is pulling its limit against a stubborn stump, when the rope is stretched taut over the pulley—it is then that you have a strain which would snap ordinary rope to pieces.

It is then that you need a rope which will take the stress of tremendous pulls—a rope with extra strength.

Such a rope is H. & A. "Blue Heart" Manila Rope—the rope built to stand every strength test and to live through years of the hardest usage.

H. & A. "Blue Heart" Manila Rope—spun from the toughest of manila fibre—is guaranteed to deliver more strength than is specified as standard by the United States Government Bureau of Standards. If it doesn't you are entitled to a new rope.

Use it in your hardest work; try it on loads that would break ordinary rope—and see it respond to every trial—with strength to spare.

A rope whose strength is insured

There are many fibres used in rope making, of varying strength and durability. Manila, the strongest, the toughest, has numerous substitutes which closely resemble it.

The public, confused by this similarity in appearance, has had to buy in the dark and

trust to the honesty of the maker for good rope. The eye cannot detect adulterations. What looks like excellent rope will often fray to pieces when comparatively new.

How, then, can you tell? There's an easy way. Pick up any piece of rope in your hands, untwist the strands, and—

If you find a thread of blue running through the center, a *Blue Heart*, then you will know that you have found a *good* rope, a rope built to deliver more strength than you require.

Then you will know that you have found genuine H. & A. "Blue Heart" Manila Rope.

Let H. & A. "Blue Heart" Manila Rope do your heavy work

A halter made of H. & A. "Blue Heart" Manila Rope has three times the strength of a leather halter. A piece of H. & A. "Blue Heart" Manila Rope the size of your little finger will carry the weight of fifteen or twenty men.

And with this strength you get a rope that is flexible, smooth-surfaced, easy to handle, and that resists water.



H&A "Blue Heart" Manila Rope

H. & A. "Blue Heart" Manila Rope is eliminating the guess from rope buying. It is a rope that will answer your every requirement—a rope built to meet your severest rope tests.

Insure yourself against rope breakage, against delay in your work—with H. & A. "Blue Heart" Manila Rope.

Leading merchants throughout the United States are selling H. & A. "Blue Heart" Manila Rope. If yours cannot supply you, write us.

The Hooven & Allison Company

"Spinners of Fine Cordage since 1869"

Xenia, Ohio

For purposes where the great strength and long-wearing qualities of H. & A. "Blue Heart" Manila Rope are not required, use H. & A. rope made from one of these less expensive fibres:

"Red Heart" identifies H. & A. rope made of sisal fibre

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"Purple Heart" identifies H. & A. rope made of mauritius fibre

"Pink Heart" identifies H. & A. rope made of African sisal

In your lighter work, where you do not need the rugged strength of H. & A. "Blue Heart" Manila Rope, you will find H. & A. "Red Heart" Sisal Rope of supreme value. Spun from selected sisal fibre, H. & A. "Red Heart" Sisal Rope is guaranteed to give that satisfaction which you should demand in the highest grade of sisal cordage.

Paint Prices Reduced!

Go to the Carter White Lead dealer in your vicinity and ask the price of

12½ lbs. CARTER WHITE LEAD.
⅔ gal. Linseed Oil.

You will then have this season's reduced cost of a full gallon of the purest and best white paint that money can buy.

For first coat, add a pint of Turpentine.

To make colored paint, the tinting colors will cost a little extra.

For large jobs, 100-lb. kegs of Carter White Lead are more economical.

You will then be able to estimate closely the cost of any needed painting and it will total much less than you think—only a small percentage of the replacement value of the buildings it will save from decay.

You can't escape the cost of needed painting. You can only choose whether you will pay for the painting or stand a greater loss through damage to your buildings—the damage resulting from unchecked decay and rot.

Another suggestion: The demand for CARTER WHITE LEAD was never so great as it is this season. The supply is large, but not unlimited. If you get yours now you will not be forced to accept a substitute nor put off painting until your dealer can get it for you.



Get ready now for Spring painting.

CARTER WHITE LEAD CO.

Made in Chicago, Ill.

Sold nearly everywhere.

The Cheapest Way To Pull Stumps

No horses needed with a **Kirstin Puller**—no extra help required. One man alone pulls biggest stumps in 4 to 10 minutes. The wonderful **Kirstin One-Man Puller** pulls little, tough or green stumps as low as 5c each; also brush, hedges and trees. Cuts land clearing cost way down. Costs less to buy—less to operate. Weighs less—has greater strength—more power.

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Read about Pyrox, the combined poison and fungicide, in the April 9th issue of this paper.

Mention The Michigan Farmer When Writing to Advertisers

Upper Peninsula News

By L. A. Chase

THE Delta County Farm Bureau is going ahead with its plan for a central milk distribution plant at Escanaba. An option on a building has been secured and meetings will now be held throughout the county to choose delegates to the conference in Escanaba. Officers will be chosen at this meeting and by-laws will be adopted, then a stock sale will be put on, it is announced. It is intended to begin the operation of the plant this spring. It is a farmers' cooperative enterprise for direct marketing of milk.

Farmers around Rapid River in Delta county are also said to be considering the establishment of a cooperative creamery. The Delta Farm Bureau has recently ordered forty thousand pounds of grass seed from the State Farm Bureau—enough, it is stated, to sow three and one-half acres of land on every farm in that county. It is claimed that this is the largest order placed by any county bureau with the State Farm Bureau. Mr. Pattison is prepared to order Petoskey Russet seed potatoes from below the straits, if his farmers want them—and some of them do. He states that trials of this variety in Menominee and Schoolcraft counties have proven very satisfactory. The Delta bureau, it is reported, has recently unloaded its sixteenth carload of feed and flour, and four cars of commercial fertilizer and one car of grass seed is due to arrive next month. The bureau is now taking orders for binder-twine, seed corn, fence-wire and seed barley.

The Michigan Potato Producers' Association inspected and certified more seed potatoes in Delta county than in any other county of the state, last year, with the exception of Antrim county. The variety was Green Mountain and a group of farmers in Delta county had 4,750 bushels of inspected certified seed potatoes. Mr. Pattison recommends his county standardize potato varieties on the basis of Green Mountains, Rurals and Petoskey Russets.

Farmers' Week for Cloverland.

The farmers' institute at the Menominee County Agricultural School, to be held March 29-31, will feature a drainage exhibit by the Michigan Agricultural College, which will indicate the crops suitable for drained and poorly drained lands. There will also be a machinery exhibit. Through the cooperation of A. T. Depue, upper peninsula director of the State Farm Bureau, there will be a display of woolen fabrics made under the direction of the State Farm Bureau, which will be in charge of Mrs. Wager, also of the farm bureau directorate. A considerable number of outside concerns will display manufactured products likely to be of interest to farmers. The grain exhibit of Michigan which was shown at the International Grain Show in Chicago, last fall, and later at Farmers' Week in East Lansing, will also be put on at the Menominee school. A distribution of pedigreed grain will take place.

Surplus of Copper.

The depression in the copper market, which has left Michigan producers with many millions of pounds of the red metal on their hands, is again leading to talk of our mining companies going into the manufacturing business along lines that will consume their own output. This has been suggested for some time, but the public announcement on the part of Mr. James McNaughton, of Calumet, manager of the largest mine in the state, that his company would go into the manufacturing business when condi-

tions were favorable, is very significant. The Calumet and Hecla has 75,000,000 pounds of copper on hand, and its manufacture into marketable articles may afford the only escape from the present situation. State Representative William Miller, of Houghton, has introduced a bill into the legislature, legalizing manufacturing by mining companies. Michigan copper, while pure copper as it comes from the ground, is produced at a relatively high cost, because it comes from very great depths, in some instances of more than a mile below the surface, and because it often comes from rock whose copper content is very low. This situation with a bad market has put the Michigan copper industry on its back, and if it is not revived, it will terminate its existence as one of the great industries of the state, and, incidentally, as one of the big tax contributors. This latter consideration will influence the legislature to do all that it can to aid the industry, and to this end, appropriations should be allowed which will permit the Michigan Geological Survey to lend whatever assistance can be rendered. Indeed, this applies to our iron ore interests as well as our copper interests. The reconnaissance work of the geological survey, its maps and investigations, are at the base of our mineral development.

Mr. W. H. Moulton, of Ishpeming, director of the sociological department of the largest corporation in the Michigan iron industry, described the work of his department to the faculty and students of the Northern State Normal School, March 3. For its 3,600 employees in the mining department, the company maintains a force of twenty social workers, including three full-time nurses and managers of the company club houses, a safety engineer to study and develop methods of insuring greater safety for the employees, whose assistant gives regular instruction in safety to classes of employees. Mr. Moulton stated that because of these efforts there are many less accidents and fatalities than formerly. A rest cottage is maintained where any woman who requires rest for recuperation from an illness or otherwise may go, and where last year eighty people were maintained for an average of twelve days each. The company supports club houses for its employees, which afford opportunity for wholesome recreation: dances, parties, athletics, meetings and games.

Hay Now Moving Rapidly.

The Chippewa County Farm Bureau is said to be swamped with orders for hay and farmers are working hard to satisfy the demand. On the other hand, local warehouses of the bureau have been cleaned out of flour, sugar and feed, and more cars are due to arrive shortly. An additional order of grass-seed will be forwarded to Lansing soon. The Chippewa Bureau has taken over a new office and warehouse building at the "Soo," which will better serve its growing requirements. The front portion will serve as a lobby and rest-room for farmers.

The sheep on the Creetan Company's ranch, Drummond Island, are reported to be wintering well. Their winter forage is clover hay and oats. Next summer they will return to their clover pasture on the cut-over lands of the island.





THE LANTERN.

WORD comes that one of the barns on the old home farm in Eaton county, burned with all contents. The owner had gone to the barn to do the chores, and set his lantern on top of a box where he kept feed, in the basement, and started milking. When he finished the first cow he found his pail was leaking, and went to the house to strain the milk, leaving the lantern.

When he returned a little later the basement was all ablaze. His team of horses, six good cows, and one calf, besides hay, grain, beans, cloverseed, and farm tools, all were consumed, as well as two straw stacks, and had it not been for the help that arrived in autos, the house, and other buildings would have burned also, as the wind was high, and the house caught fire several times, but was extinguished.

It is thought a cat may have rubbed against the lantern and upset it, or some of the stock got loose and nosed it. No one should ever set a lantern down in the barn, while doing chores, under any circumstances. A lantern around the barn should always be hung up. A short strap, small rope, or best of all, a short piece of light chain, such as can be purchased at the hardware store for a few cents, and a har-

A Point of View

THE cooperative spirit must grow slowly. It is, in fact, a point of view, and the farmer acquires it as a permanent conviction only when it comes to him, step by step, out of the abundance of his own experience.—Powell.

ness snap at the end is the best possible thing to hold the lantern. If the end of the chain is firmly fastened overhead and the bail of the lantern held in the snap, loose stock might nose it, but could not upset it. If hung on a nail, or on a wire hook, it could easily be thrown off by a nosing animal, but with a chain and snap it would be safe.

Just the same, no one should go away from the barn, leaving a lighted lantern there. The pecuniary loss was bad enough, but just think of the poor dumb brutes tied up and roasted alive. Every year more of the farmers are putting in electric light plants that light all their buildings, as well as do much more to make the work easier, especially around the house. With such a plant, and the buildings properly wired the fire hazard is reduced to a minimum. Speed the day when every farm has electric lights.

APOLLOS LONG.

LAWMAKERS' KNOTTIEST PROBLEM.

WHILE a national referendum vote of the members of the United States Chamber of Commerce was almost unanimously for repeal of the excess profits tax, there was a majority vote against any form of sales tax, as a substitute for or in addition to, other forms of tax. A large majority agreed that there should be excise taxes upon some articles of wide use but not of first necessity. The opinion is prevalent in congress that the question of how best to raise the government revenues, will be one of the knottiest problems for our lawmakers to solve during the next session.



Is your sink 36 inches high? Most kitchen sinks are so low that they cause endless discomfort and back strain. "Standard" kitchen sinks have adjustable legs, so that they can be set from 32 to 36 inches high, as desired. Measure height of sink from top of rim to floor.

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EXTERIOR. Note—Send photo of house if possible and answer these questions:

Present color.....
Color of adjacent houses.....
Amount of foliage.....
Direction building faces.....

INTERIOR. Note—Send a ground floor sketch of rooms State which rooms you wish to decorate

Present finish of walls.....
Color of woodwork.....Floors.....
Color of draperies.....
What finish of furniture?.....

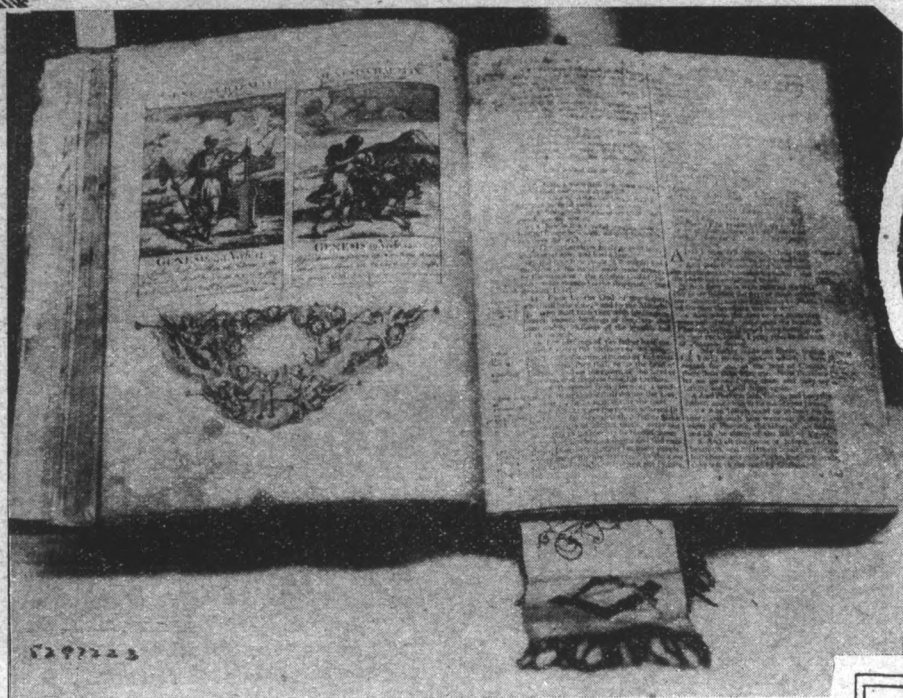
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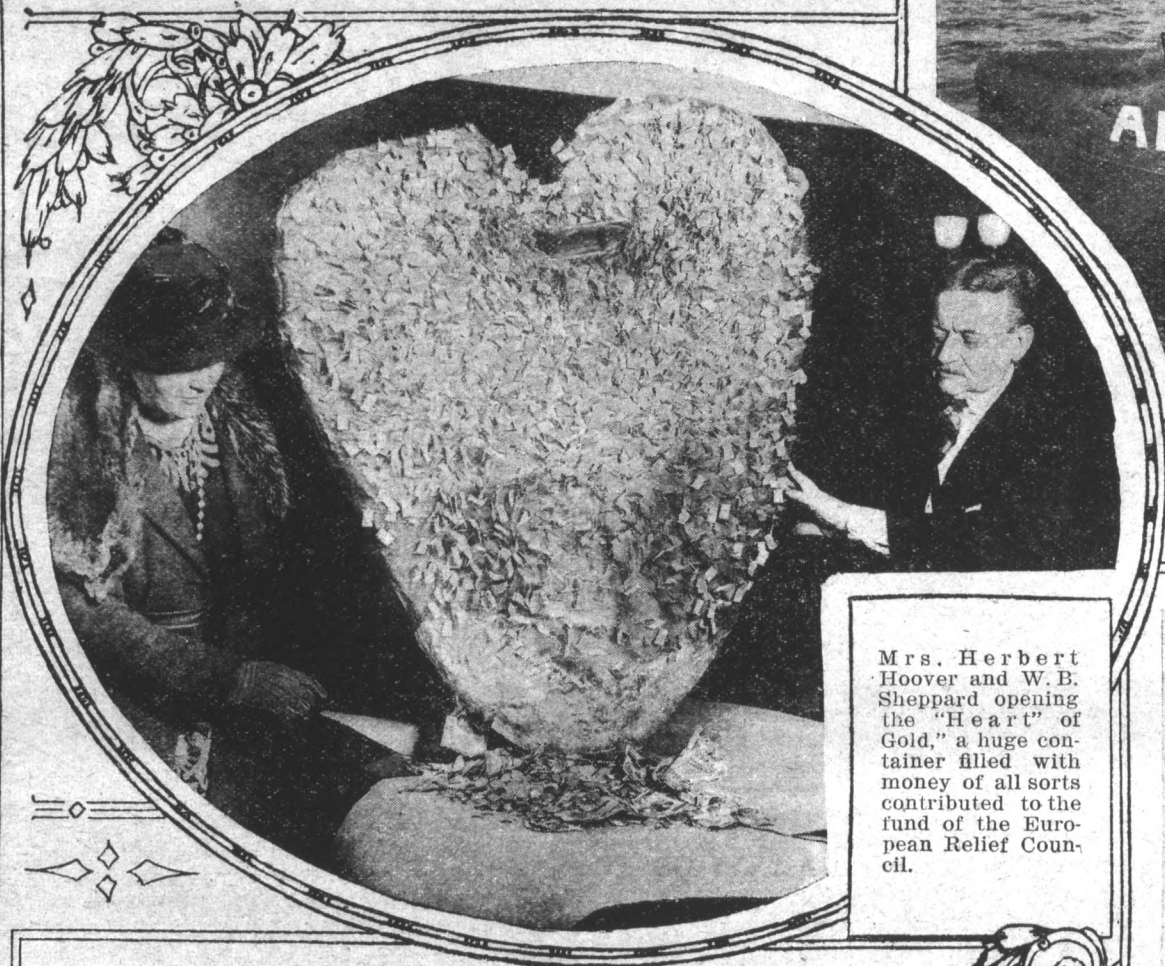
WORLD EVENTS IN PICTURES



The same historic bible used at the inauguration of George Washington was used at the inauguration of Warren G. Harding.



Mrs. Herbert Hoover, whose husband will be Secretary of Commerce in President Harding's cabinet.



Mrs. Herbert Hoover and W.B. Sheppard opening the "Heart" of Gold, a huge container filled with money of all sorts contributed to the fund of the European Relief Council.



Miss Virginia K. Gunther came near landing, a seventy-pound Amberjack from a seaplane at Palm Beach, Fla.



Wooden cars splintered almost to matchwood in the fatal railroad wreck in which thirty-seven mangled bodies were lifted February 20, when a Michigan Central train was crashed into by a New York Central train at Porter, Indiana.



Mr. Edwin Denby, of Detroit, who will serve as Secretary of the Navy in President Harding's cabinet. Mr. Denby resigned from congress to become a private in the U. S. Marines during the war.

THE CLAN CALL

By HAPSBURG LIEBE Copyright 1920, Doubleday, Page & Co.

CHAPTER I.

David Moreland's Mountain.

CARLYLE WILBURTON DALE—known to himself and a few close friends as Bill Dale—had laid out a course of action almost before the northbound train had left the outskirts of the state capital behind. It incurred facing big odds; but other men had faced big odds and won out, and what others had done he could do. Indeed, he had already done several things which other men might not have thought of doing, and one of them was the leaving of a bride, not figuratively but literally, at the altar in a fashionable church! But he knew Patricia hadn't wanted to marry him any more than he had wanted to marry her.

It was only natural for him to think of coal, now that he had cut loose for all time from the "set" in which he had always been a colossal misfit, now that he must pull his own oars or virtually perish. He had heard coal talked since the day of his birth; to him coal and business meant exactly the same. His thoughts ran backward.

One of his father's associates had often spoken of a fine vein in the mountains of eastern Tennessee—had often tried to persuade his father to look into it, to no avail. Young Dale remembered that this vein lay not far from a long railroad siding called the Halfway Switch, in the vicinity of Big Pine Mountain. The owners were mountainfolk of English descent, his father's associate had said. Decidedly strange, thought Dale, that his father had never cared to investigate it.

It was growing late. Dale and the midnight hour had always been strangers. He drew the rim of his soft hat over his eyes, lay back on the red cushions, and let the monotonous click!-click! of the rail joints below lull him to sleep.

The cindery little train reached the long siding about the middle of the following morning. Dale took up his bag, hastened out, and soon found himself standing alone in the heart of an extremely wild section of country. But it was a beautiful country. Great rugged, forest-covered, green hills reared their heads on all sides; everywhere he saw the gorgeous flowers of the laurel, the royal purple of the redbud, the golden yellow of the wild honeysuckle, the dainty white stars of the puccoons, and giant ferns—it was June in the mountains, too.

When the noises of the little train and the fast mail it had just met had died away, there came the saucy chattering of boomer-squirrels and the sweet twittering of birds. Dale caught the joyous spirit. He could have fairly shouted out of the fullness of his very

human heart. Here all was unspoiled and unprofaned, and something whispered within him:

"They won't call you a savage here—make this your own country."

From somewhere on a nearby mountainside a rifle's keen report split the air; a bullet whined like a mad hornet; Dale's hat jumped a little on his head.

The awakening was exceedingly rude. Dale wheeled, his grey eyes ablaze, and saw only a tiny cloud of smoke-mist rising from the laurels more than fifty feet away.

"Come out, you coward!" he roared. "Come out and let me see you," curiosity taking the place of anger in his

"If I behave myself—!" Dale laughed. "Why, I couldn't be naughty if I tried; I'm the one and only mamma's little Willie-boy! I wonder if I could put up at some house near here; eh?"

A spirit of mischief shone in the young woman's hazel eyes.

"Put up what?" she asked, revealing two rows of perfect teeth kept perfectly white by the constant use of a spicewood toothbrush.

"I mean stop—er, stay for a few days, you know."

"The might be," thoughtfully.

"Where?"

"At pap's, or grandpap', or with most any o' my people; or," she added with a contemptuous twist to her lips; "you

ever seen outside a circus. The newcomer had a smoothly-shaven chin, his coal-black hair was long and his long moustache completely hid the narrow slit that was his mouth. In one hand he carried a repeating rifle.

"Who's that?" Dale half whispered.

"That's By Heck," answered the girl. She continued in a low voice, "His name's Sam Heck; but pap he called him 'By Heck' one day, and the nickname stuck to him like molasses. Everybody calls him that now, even the revenuers. By, he's the biggest eater, and the biggest liar, in the world; But his lyin' don't never do no harm, and nobody keers. So ef ye want to go to the settlement, Mister, By, he'll take ye over. They mebbe ain't got what you're used to fo' eatin', but ye'll be welcome to what the' is."

She seemed more inclined toward being friendly now. Her voice had become soft and musical. Although Dale did not suspect it, the change had been made in the sacred name of hospitality—most mountainfolk being long on hospitality.

She laughed a little, turned, and disappeared among the blooming laurels.

The man By Heck wore the poor clothing of a poor hillman. His hat, which had once been black, was all brim and yet all crown; his suspenders, which had been bought with a 'coonhide, were redder than fire; his rundown cowhide boots seemed ridiculously short because of the great length of his slender legs.

When he had reached a point some three yards from Dale, he halted, placed the butt of his rifle carefully between his toes, and leaned on its muzzle; then he deliberately began to take eye measurements of the newcomer, and there was not much about Dale's exterior that escaped his keen scrutiny.

Dale didn't like the stare—to him it was impudent.

"Well, what's the verdict?" he asked sharply.

"Spoke like a man," drawled By Heck. "I reckon you must be up here a-lookin' fo' coal."

"How did you reach such a conclusion as that?"

"Jest plain hoss sense." The drooping moustache muffled the words somewhat. "The' ain't but three things' at can bring a city man here, Mister," he drawled on, "and them's moonshine stills, bad health, and coal. You shore ain't got bad health, and you ain't got the cut of a revenuer, though a few minutes ago I thought ye was."

"And you shot at me!" said Dale.

"No," objected Heck. "I shot at yore hat. I allus hits at what I shoots at, Mister. I wanted ye to turn yore face, so's I could see it, and ye did. As fo' that coal—"

Without question here is one of the strongest serials published in many years. The pull of a strange but deep fascination took Bill Dale, city-bird but mountain-minded, to the Kentucky Hills. Joining the Morelands by mere accident he took up their friendship and their enmities. Love healed one feud but there was coal under David Moreland's mountain and a new feud was born. Here is the first installment.

voice. "I've always wanted to know just what a real highwayman was like!"

The muffled sound of a twig breaking a short distance off to his left next claimed his attention. He was being closely watched by a pair of the finest, clearest brown eyes he had ever seen. He saw her eyes first; he never forgot that.

She was standing on a low cliff beyond the sparkling creek that flowed beside the railroad, and she was partially hidden by a clump of blooming laurel. But Dale could see that she was about twenty; that every line of her rounded, graceful figure whispered of a doelike strength; that she was as straight as a young pine; that her chestnut-brown hair caught the sunlight, and that her face was oval-shaped and handsome—rather than pretty—in spite of its tan. She was barefooted and her dress was a simple thing of white-dotted blue calico.

Dale took off his hat. There was a bullet hole in the very top of its high-peaked crown?"

"Who's the robber?" he frowned.

The girl blushed.

"Mebbe he ain't a robber," she said. "Mebbe he thought you was somebody else. Anyhow, you ain't very bad hurt, are ye?"

Dale smiled. "Oh, not seriously."

"You ain't likely to be, ef ye be have yeself."

might stay with some o' them low down Morelands."

"Where do your people live?"

"About six mile back that way." She pointed over her shoulder with a forefinger.

"Six miles," exclaimed Dale. "And how does one go, please, ma'am?"

"Walk," quickly. "The trail ain't more'n a foot wide, but the's been bigger men 'an you travelled it."

"Am I to understand that you have walked that far this morning?" asked Dale.

"Yes," answered the young woman. "It must be something important."

"Yes," she replied. "To see the trains pass, fo' one thing."

"Would you mind showing me the way to your parental domicile?"

"What's that, fo' goodness' sake?"

"Your home, you know," Dale explained with a smile.

"Oh, my home. Why didn't you say so then? No, I won't," she declared.

Dale put his bag down and rested his hands on his hips.

"Why, may I enquire?"

"'Cause I won't. I don't never keep comp'ny with no strange menfolks. But yander comes By, and he'll show ye the way; he's goin' over to the settlement."

Dale faced to the right and saw, coming toward him with steps that would have measured almost four feet, the tallest and lankiest individual he had

AL ACRES—Surely Slim is an All 'Round Man.



"The Morelands they owns the coal in David Moreland's Mountains, and they won't sell it fo' no 'mount o' money. They lives over in the settlement them and the Littlefords. The settlement it lays atween David Moreland's Mountain and the Big Pine, on a purty green valley. Doe River runs atween the Moreland's and the Littlefords. They're everyone darned fine folks. I'm a goin' over thar now. Want to go 'long? Say—darn my picture ef I didn't fo'git to ax what might be yore name, Mister!"

"Bill Dale," came quickly—"Bill Dale, Settlement? Sure! Lead the way, By Heck. Who's the young woman I was talking with when you came up?"

"Who? Her? That's old Ben Littleford's gyurl. Her name's Babe. That's what they call her. She's got another name; but it ain't been used fo' so long it's been fo'got, I reckon. She's the youngest one o' old Ben's children. I reckon mother'd know her name, a-seein' she knows everything else. Mother, she's the settlement's fortune teller, and I'm the settlement's whiskey-maker; darn my picture ef I cain't make twenty-year-old cawn whiskey in a day and a half! Wisht I may die ef I cain't. I makes whiskey fo' both sides of 'em. But Babe—"

"Well, Babe she's sort o' odd, somehow. She hain't like none o' the rest o' the Littlefords. By gosh, she's awful high-headed. She can read good, Babe can. Old Major Bradley, from down at Cartersville in the lowland, he spends his summers up here fo' his health, and he teach'd Babe how to read. Fine feller, Major Bradley, Lawyer. Babe she has done read everything in the whole country. The's several Bibles, and a book about a Pilgrim's Progress, and a Baker's Hoss and Cattle Almanack, and a dic-tionary. But the' ain't nothin' much in the dictionary, I 'low. Babe she comes over here to git newspapers to read. The' used to be a old trainman who'd throw off newspapers here fo' her to git. I reckon he must done be dead now, but Babe jest keeps on a-comin'. Everybody likes Babe."

"But we'd better light out fo' the settlement, Mr. Bill, or we'll miss dinner, mebbe. I'm a plumb fool about eatin'. I e't twenty-two biscuits o' flourbread this mornin' fo' breakfus', asides a whole b'iled hamshank, and other things accordin'. It's the dyin' truth! Come on, Mr. Bill."

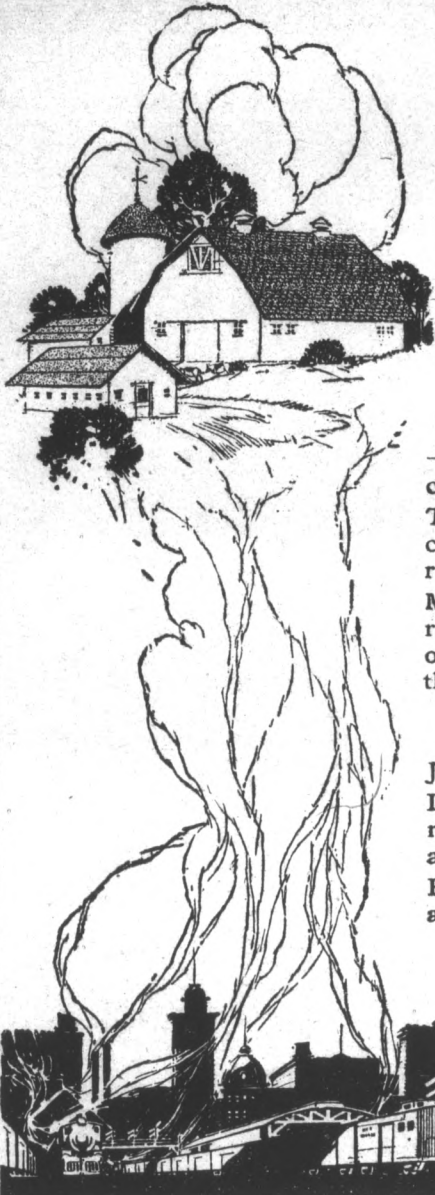
They went down to the creek, crossed it on stones, and began to climb the low cliff. Soon they had entered a narrow, winding trail that led upward at a gradual slant, and Dale had to do some of the best walking of his life in order to keep pace with his long-legged guide.

After an hour's travelling, Heck stopped in the trail and put the butt of his rifle to the ground.

"From right here, Bill," he said, "we can see every house in the whole settlement."

They were standing on the crest of David Moreland's Mountain. Below them lay a broad valley checkered with small farms; and each farm had its log cabin, its log barn and its apple orchard. Growing corn and wheat filled the fields; the fragrant green meadows along the clear and beautiful, sycamore-lined little river were dotted here and there with grazing cows. Beyond it all rose the great and majestic Big Pine, which was higher and more rugged with cliffs than David Moreland's Mountain.

"The Moreland's lives on this side o' the river, and the Littlefords lives on yan side," drawled Heck. "They don't never have nothin' to do with each other, but they don't hardly ever fight; they're all strappin' big men, and they fights so hard it don't pay. My gosh, Bill, every man of 'em can shoot a gnat's eyelash off at four hundred yards—I wish I may drap dead ef (Continued on page 390).



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Are you going to Re-roof or Build? If so, you should use our peerless Inlaid Diamond Roofing applied over boards or shingles, laid lengthwise or updown. Made on an extra heavy woolfelt foundation, high-proof asphalt saturation and double coating, unfading crushed rock surfacing, with an unstoned leakproof lap—this Roofing, for permanence, durability and modern design stands supreme. Without a Rival. Fully guaranteed. Inlaid Diamond Roofing Red and Green 32 in. wide in rolls of 108 sq. feet, weight 90 lbs. \$5.00. Plain Red or Green in rolls of 108 sq. feet, weight 80 lbs. \$3.85 including nails and cement, all F. O. B. Detroit. Write for illustrated catalog.

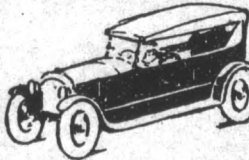
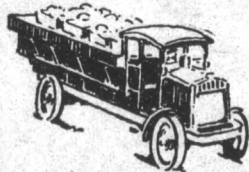
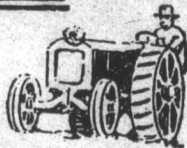
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(Established 38 years) 2174 Gratiot Ave., Detroit, Mich.

Worn and leaky piston rings waste motor power and fuel



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McQuay-Norris Equipment—the Superoyl Ring to keep oil out of the combustion chamber—and the genuine LEAK-PROOF Ring to prevent the leakage of fuel—will increase your gas engine power—save gas and oil—and decrease carbon troubles. These rings represent 10 years of successful experience in piston ring manufacture. Your dealer can supply you in any size or over-size for any make or model of engine.

McQuay-Norris Mfg. Co., St. Louis, U. S. A.



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It explains why McQuay-Norris Piston Ring Equipment will increase gas engine power, save fuel and oil, and decrease carbon troubles. Address Dept. AE

McQUAY-NORRIS
LEAK-PROOF Superoyl
PISTON RINGS

3F

THE VOICE OF THE PACK

By EDISON MARSHALL

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But Snowbird only heard the soft glide of the wolves in the snow. The wind was blowing toward Dan; and while he had heard the loud chorus of the pack, one of the most far-carrying cries, and the penetrating crack of a pistol, she couldn't hear his answering shout. In fact, the wilderness seemed preternaturally still. All was breathless, heavy with suspense, and she stood, just as Dan had thought, between the ruin of her fire and the sled, and she looked with straight eyes to the oncoming wolves.

"Hurry, Snowbird," Lennox was whispering. "Give me the pistol—for that last work. We have only a moment more."

He looked very calm and brave, half-raised as he was on the sled, and perhaps a half-smile lingered at his bearded lips. And the bravest thing of all was that to spare her, he was willing to take the little weapon from her hand to use it in its last service. She tried to smile at him, then crept over to his side.

The strain was over. They knew what they had to face. She put the pistol in his steady hand.

His hand lowered to his side and he sat waiting. The moments passed. The wolves seemed to be waiting too, for the last flickering of the little fire to die away. The last of her fuel was ignited and burning out; they were crouched and ready to spring if she should venture forth after more. The darkness closed down deeper, and at last only a column of smoke remained.

It was nothing to be afraid of. The great, gray leader of the pack, a wolf that weighed nearly one hundred pounds, began slowly and deliberately to set his muscles for the spring. It was the same as when the great bull elk comes to bay at the base of the cliffs: usually some one wolf, often the great pack leader, wishing to remind his followers of his might, or else some full-grown male proud in his strength, will attack alone. Because this was the noblest game that the pack had ever faced, the leader chose to make the first leap for himself. It was true that these two had neither such horns nor razor-edged hoofs as the elk, yet they had eyes that chilled his heart when he tried to look at them. But one was lying almost prone, and the fire was out. Besides, the madness of starvation, intensified ten times by their terrible realization of the wound at her hip, was upon the pack as never before. The muscles bunched at his lean flanks.

But as Snowbird and her father gazed at him in fascinated horror, the great wolf suddenly smashed down in the snow. She was aware of its curious, utter collapse actually before the sound of the rifle shot that occasioned it had penetrated her consciousness. It was a perfect shot at long range; and for a long instant her tortured faculties refused to accept the truth.

Then the rifle spoke again, and a second wolf—a large male that crouched on the other side of the sled—fell kicking in the snow. The pack had leaped forward at the first death; but they halted at the second. And then terror came to them when the third wolf suddenly opened its savage lips and screamed in the death agony.

Up to this time, except for the report of the rifle, the attack had been made in utter silence. The reason was just that both breath and nervous force are needed to shout; and Dan knew about it. I wasn't going to tell Failing could afford to waste neither you until—until certain things happened—these vital forces. He had dropped

to his knee, and was firing again and again, his gray eyes looking clear and straight along the barrel, his fingers without jerk or tremor pressing again and again at the trigger, his hands holding the rifle as in a vice. Every nerve and muscle were completely in his command. The distance was far, yet he shot with deadly, amazing accuracy. The wolves were within a few feet of the girl, and a fraction's waver in the gun barrel might have sped his bullet toward her.

"It's Dan Failing," Lennox shouted. Then Snowbird snatched her pistol from her father's hand and opened fire. The two shells were no longer needed to free herself and her father from the agony of fangs. She took careful aim, and although a pistol is never as accurate or as powerful as a rifle, she killed one wolf and wounded another.

Frenzied in their savagery, three or four of the remaining wolves leaped at the body of one of the wounded; but the others scattered in all directions. Still Dan fired with the same unbelievable accuracy, and still the wolves died in the snow. The girl and the man were screaming now in the frenzied joy of deliverance. The wolves scurried frantically among the trees; and some of them unknowingly ran full in the face of their enemy, to be shot down without mercy. And few indeed were those that escaped—to collect on a distant ridge, and, perhaps, to be haunted in dreams by a Death that came out of the shadows to blast the pack.

Again the pack-song would be despairing and strange in the winter nights—that age-old chant of Famine and Fear and the long war of existence with only Death and Darkness in the end. And because it is the voice of the wilderness itself, the ten-foot that camps in the evergreen forest will listen, and his talk will die at his lips, and he will have the beginnings of knowledge. And perhaps he will wonder if God has given him the thews and fiber to meet the wilderness breast to breast as Dan had met it: to remain and to fight and to conquer. And thereby his metal will be tested in the eyes of the Red Gods.

Snowbird stood waiting in the snow, arms stretched to her forester as Dan came running through the wood. But his arms were wider yet, and she went softly into them.

"We will take it easy from now on," Dan Failing told them, after the camp was cleared of its dead and the fire was built high. "We have plenty of food; and we will travel a little while each day and make warm camps at night. We'll have friendship fires, just as sometimes we used to build on the ridge."

"But after you get down into the valleys?" Lennox asked anxiously. "Are you and Snowbird coming up here to live?"

The silence fell over their camp; and a wounded wolf whined in the darkness. "Do you think I could leave it now?" Dan asked. "By no gift of words could he have explained why; yet he knew that by token of his conquest, his spirit was wedded to the dark forests forever. "But heaven only knows what I'll do for a living."

Snowbird crept near him, and her eyes shone in the bright firelight. "I've solved that," she said. "You know you studied forestry—and I told the supervisor at the station how much your force are needed to shout; and Dan knew about it. I wasn't going to tell Failing could afford to waste neither you until—until certain things happened—and now they have happened, I

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Pyrox

TRADE MARK REGISTERED

Read about Pyrox, the combined poison and fungicide, in the April 9th issue of this paper.

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can't wait another instant. He said that with a little more study you could get into the Forest Service—take an examination and become a ranger. You're a natural forester if one ever lived, and you'd love the work."

"Besides," Lennox added, "it would clip my Snowbird's wings to make her live on the plains. My big house will be rebuilt, children. There will be fires in the fireplace on the fall nights. There is no use of thinking of the plains."

"And there's going to be a smaller house—just a cottage at first—right beside it," Dan replied. He could go back to his forests, after all. He would not have to throw away his birthright, fought for so hard; and it seemed to him no other occupation could offer so much as that of the forest rangers—those silent, cool-nerved guardians of the forest and keepers of its keys.

For a long time Snowbird and he stood together at the edge of the fire-light, their bodies warm from the glow, their hearts brimming with words they could not utter. Words always come hard to the mountain people. They are folk of action, and Dan, rather than to words, trusted to the yearning of his arms.

"We're made for each other, Snowbird, darling," he told her breathlessly at last. "And at last I can claim what I've been waiting for all these months."

He claimed it; and in open defiance to all civil law, he collected fully one hundred times in the next few minutes. But it didn't particularly matter, and Snowbird didn't even turn her face. "Maybe you've forgotten you claimed it when you first came back," she said.

So he had. It had completely slipped his mind, in the excitement of his fight with the wolf pack. And then while Lennox pretended to be asleep, they sat, breathless with happiness on the edge of the sled and watched the dawn come out.

THE END.

EXTENUATING CIRCUMSTANCES.

BY HELEN COMBES.

Mrs. Brown is as homely as homely can be

Of beauty she hasn't a mite;
Her hands are as rough as the bark on a tree,

And her face—well, she calls it a sight.

But in spite of these drawbacks, the neighbors all speak,

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But—she makes the best crullers in town.

Mrs. Smith has a temper that some people term

Plain shrewish; her tongue's like a tack;

So sharp and so pointed; her enemies squirm

When she stretches them out on the rack.

But her husband's contented, and happy, and stout,

Her boys wouldn't change if they could.

For in spite of her failings, there isn't a doubt,

As a cook, she is all to the good.

Mrs. Jones is—well "soft"—if you want to be kind

But those who are brutally plain,

Will tell you straight out like enough,

that her mind

Is affected, and under a strain.

She "acts queer," but I notice when—

ever a kid

Falls down, and gets hurt on the stones

Its sorrows are soothed and its tearful face hid,

On the bosom of "soft" Mrs. Jones.

Miss Green is an atheist, so people say

She has no religion or creed.

She is travelling alas! on the broad shining way

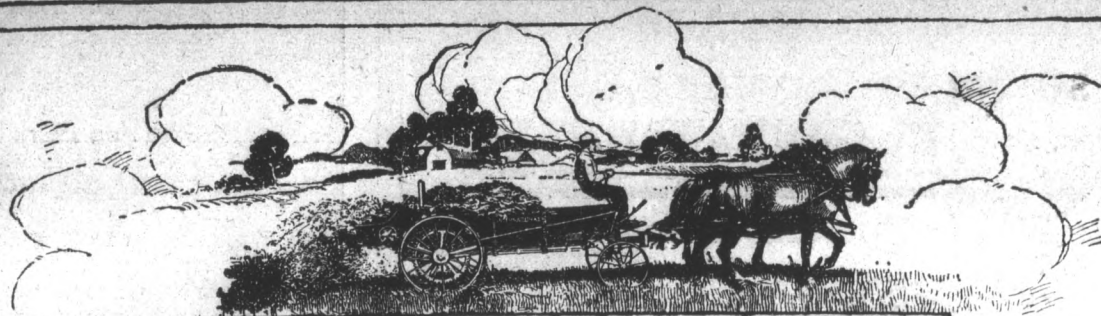
Which straight to destruction will lead.

But if a poor girl is in trouble, and lacks

A champion on whom she can lean.

When all the "good people" are turning their backs

Who stands by her? that "wicked" Miss Green.



A Word for The New International Manure Spreader

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The New International in its first year (1920) could not cope with the great demand for it. This year—place your order early, and rely on the constructive economy of the rolling-bearing International. See the spreader at the International Dealer's or write the Chicago address for information.

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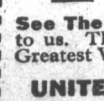
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Write today for this **FREE** free book—a wonderful guide to better gardens. 300,000 Isbell customers buy from this book. It will pay you, too. A postcard will do.
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THE LITTLE WHIRLWIND MIXER CO.
427 Gould St. LA CROIXE, WIS.
ONLY \$75.00
8 MEN CAN'T STICK IT

The Clan Call

(Continued from Page 387)

they cain't! Do ye see that big cabin go a-fishin'. Say—afore I fo'git it; don't right plumb in the middle o' the nigh you mention to John about me a-sayin' half o' the settlement, Bill? Well, the boss o' the Morelands lives thar. John Moreland. That's whar you want to go, Bill, sence ye've got a oncyorable case o' the disease knowed as coal-on-the-brain. But I can tell ye aforehand, you ain't got enough money to buy that coal, don't matter how much money ye've got. Dadburn my picture ef I dont know edzactly what I'm a talkin' about!"

Dale was not looking toward John Moreland's home now. His gaze had wandered to the other side of the river. By Heck waited a full minute for a reply to his speech, then spoke again:

"The gyrul or the coal—is that what's a botherin' ye, Bill?"

Dale's eyes twinkled. "Must I choose between them?" he laughed.

"Shore!" By Heck wasn't even smiling. "Shore! The Morelands and Littlefords hates each other wuss nor a blue-tailed hawk hates a crow. The gyrul, or the coal, Bill?"

"We'll go down to John Moreland's," announced Dale.

The mountaineer took up his rifle. "Let me gi' ye a word or two o' warnin'," he continued seriously. "Don't you offer to pay John Moreland fo' eatin' his grub, nor fo' sleepin in his bed, nor fo' chawin' his tobacco. Ef ye do, yore goose will shore be cooked with John Moreland. But ef ye was to brag on the vittles a little, John's wife a-bein' pow'ful handy in the kitchen, it wouldn't do a bit o' harm. Do ye understand it all now, Bill?"

Dale nodded, and they began the descent.

John Moreland's house was built of whole oak logs, which were chinked with oak splits and daubed in between with clay; the roof was of handmade boards, and a chimney of stones and clay rose at either end. There was a front porch and a back porch, the ends of which were completely closed in by walls of blooming honeysuckles. The yard was filled with all manner of old-fashioned flowers.

John Moreland himself sat on the front porch, and beside him lay a repeating rifle, two young squirrels that had been very neatly shot through the head, and a weary black-and-tan hound. He was an uncommonly big man, and about forty-seven; his eyes were grey and keen; his thick hair and full beard were a rich brown, with only a few threads of white. He wore boots, brown corduroy trousers, a blue flannel shirt, and a broad-rimmed black hat; his belt was a cartridge belt. There was a certain English fierceness about the man. One felt that he could trust John Moreland.

As the moonshiner and his companion reached the gate, Moreland rose and pushed his hat back from his forehead.

"Hi, John," grinned Heck. "This here feller wants to stay with ye a few days. John. Seems to be all right."

"Come right in," invited the chief of the Morelands. He indicated the home-made chair he had just vacated. "Set down thar and rest, stranger. I'll be back in a minute or so."

He hastened into the cabin, carrying the squirrels with him.

"He's went to tell his wife to hatch up a extr'y good dinner, Bill," whispered Heck. "Pepper-cyored ham, young chicken, hot biscuits; fresh butter, wild honey, huckleberry pie and peach pie and strawberry preserves—Bill, I can't hardly stand it. Blast my picture ef I couldn't eat two whole raw dawgs right now, I'm that digbusted hongry. Well, I got to ramble on home. I live down the river half a mile, me and my maw. Come to see me, Bill, and we'll killed him, but we never found him."

John Moreland returned presently. The man from the city rose and proffered his hand.

"My name," he began, old habit strong upon him, "is Carlyle—"

Before he could get any farther with it, John Moreland flung the hand from him as though it were a thing of unspeakable contamination. His bearded face went deathly white with the whiteness of an old and bitter hatred. His great fists clenched, and every muscle in his giant body trembled.

"What's the matter, man?" Dale wanted to know.

"Carlyle!" Moreland repeated in a hoarse growl. "You say yore name is Carlyle!"

"Yes," wonderingly, "but that's only a part of it. My name is Carlyle Wilburton Dale—Bill Dale. What's the matter?"

"Did you come from West Virginny?" sharply.

Dale gave the name of his home town and state.

"That's diff'rent." The mountaineer's countenance became lighter. "This man I'm a thinkin' about, he was from West Virginny. I hope you won't hold nothin' ag'in me fo' actin' up that away. I couldnt he'p it, shore, it seems. You'll know how I felt when I tell ye about it, Mr. Dale. I owe it to ye to explain. Jest a minute—"

He stepped into the cabin and brought out another chair, sat down heavily and crossed his legs. Dale, too, sat down.

"The mountain you had to come over to come here, Mr. Dale," Moreland began, his big voice filled with an old, old sorrow, "is knowed as David Moreland's Mountain mostly because David Moreland is buried in the very highest place on the top of it, him and his wife. He was my brother, and he was the best brother a man ever had. It was allus the talk o' the neighborhood, how much we liked each other. Up ontel the time he was married, I went with him whar he went, and he went with me whar I went. I'd fight fo' him, and he'd fight fo' me. It's hard to tell, even after this long time. . .

"David, he was a strappin' big man, like all o' the Morelands. He was about yore size, and grey-eyed like you, and he had brown hair like you. When you walked up to the gate, it made me think o' him the day he was married; he was dressed in dark blue like you. Then he went up here one summer and found this vein o' coal. He got lawful p'session o' the mountain, and moved his wife up here. The rest of us lived over in the Laurel Fork country then."

"One day I got a letter from David, which said that a man named John K. Carlyle was a-goin' to buy his mountain and the coal, and said that his wife was pow'ful sick. A week later she died, and left a baby which died, too, accordin' to a old Injun by the name o' Cherokee Joe, who knowed my pap and knowed David. And a month later we was all dragged from our beds by this same Cherokee Joe, tellin' us that Carlyle had shot David. Carlyle, Cherokee Joe said, was a drinkin' hard. The Injun seed the shootin' through a window."

"It was might' nigh it three days later when we got here and found poor David a-layin' whar he'd fell. We scour-ed the mountains, fo' miles and miles around in a s'arch fo' the dawg who maw. Come to see me, Bill, and we'll killed him, but we never found him."

The land up here looked purty, and it belonged to us by David's death; so we all moved up here to live, and built us cabins.

"Major Bradley found out about the end o' my brother, and he wanted us to put the case in the hands o' the law. But we wouldn't do it. A Moreland never goes to law about anything. He pays his own debts, and he collects what is his due."

John Moreland arose and paced the porch floor, which creaked under his weight. He stopped before Dale, and went on sadly:

"Now ye'll know why I was so much tore up when I heered yore name, the Carlyle part. John K. Carlyle killed the best man 'at ever lived. And mebbe ye'll understand why we ain't never had the conscience to sell the coal, which cost Brother David his life."

Moreland's guest sat staring absently toward a brown-winged butterfly that was industriously sipping honey from the heart of a honeysuckle bloom. He gave no sign that he had heard anything out of the ordinary, but in an odd, persistent way his mind seemed to connect his father, John K. Dale, with the story he had just heard.

John K. Dale had come originally from West Virginia, and he had flatly refused, time upon time, to make any investigation of the Moreland coal property.

The hillman interrupted young Dale's thinking:

"Addie, she's a-goin' to have dinner ready purty soon. Would ye like to wash, Mr. Dale?"

"Yes," was the answer, and in the tones of Bill Dale's quiet voice there was a shade of meaning that Moreland did not catch. "Yes, I'd like to wash."

CHAPTER II. In the Cup.

DALE found the humble home of his mountaineer host a home in the fullest sense of the word. The utter honesty and simplicity of it, and the absence of everything that was not necessary, gave it a certain charm.

At the noonday meal, Dale met Mrs. Moreland and the sons of the household, and they were exactly as he had pictured them. Mrs. Moreland was quiet, motherly, always smiling, as straight and real as her husband. The sons, Caleb and Luke, were as much alike as the fingers on your hands; they were tall and broadshouldered, grey-eyed and brown-haired.

Before sundown Dale had become acquainted with the rest of the Morelands, and he liked them, every one. He was at the cabin of his host's grey old father and mother for a long time. Grandpap Moreland proudly showed him a long-barreled Lancaster rifle whose stock was marked with many notches, which indicated many victories over many black bruins.

When supper was over John Moreland lighted the big glass lamp in the best room, and the family and their guest gathered there to spend the evening. Then the lanky moonshiner and his mother came in.

Granny Heck had the sharp features and the stooped, thin figure of a witch. She wore a faded blue bandana about her white head, and she carried a long hickory staff; there was a reed-stemmed clay pipe in her mouth, and her dark calico skirt had a tobacco pocket in it.

Her son preceded her into the room. He walked to the centre-table, faced about, and said with a low and airy sweep of his hand:

"Bill, old boy, this here's maw. Maw, she tells forchunes."

"So this here," creaked Granny Heck, looking over the brass rims of her spectacles, "is Mr. Bill! Well, well! And la, la! I had a uncle named Bill, and he could jump a nine-rail fence. He done it on his fiftieth birthday, and won a gallon o' applejack and a 'coonhide. It's shore a fine name. I jest thought to myself 'at I'd come up

and see ye, Mr. Bill, and tell yore forchune."

She dropped into the rocker that Caleb had placed for her.

"Addie," she said to the smiling Mrs. Moreland, "will ye bring me a cup half full o' coffee grounds?"

When the cup came, the fortune-teller took it and shook it and patted it, all the while muttering mysterious words that she had learned from the old Indian, Cherokee Joe—which served her purpose very well. Then she moved a trifle nearer to the lamp, and began to look intently into the cup.

"I see," she mumbled more or less sepulchraly, "a pow'ful good-lookin' gyurl in a caliker dress, with her hair a-hangin' away down her back. A bare-footed gyurl, with big, purty eyes. She's a standin' on a low cliff, a-peepin' at you through the laurels, Mr. Bill. This is in the past. . . ."

"In the future," she went on slowly, "I see this here as plain as daylight through a knothole; a awful big man, with curly black hair and curly black beard, and with eyes like a cliffhawk's, and I see you too, Mr. Bill; and I see a fight, a master fight—Lord ha' mus-sy, what a fight! But you'll marry the gyurl after all, Mr. Bill."

Dale laughed. The old woman had described Babe Littleford. But who was the "big, dark man?" Some fellow who had lost his heart to the mountain girl, perhaps.

When the Hecks had gone, John Moreland leaned forward and touched his guest on the knee.

"That thar big man mentioned in tellin' yore forchune," he said, "might ha' been Black Adam Ball. Y'onderstand, I don't believe in forchune-tellin'. But Granny Heck is a durned good guesser, and she hits it lots o' times. Black Adam he lives with his pap and mother a few mile up the river. He's about thutty-five, and he looks like a bear-beast with his curly beard and long hair. As big as a skinned hoss, he is, and plumb ongodly strong. He's been a-beggin' Babe Littleford to marry him fo' a year or two, and she won't listen to him."

"Ef ever ye do haf to fight Black Adam," John Moreland went on, "ye want to fight him with a two-eyed shotgun and buckshot. He's the meanest man on earth; snake-broth and pizen vine is religious aside o' him. But ontel ye begin a-makin' love to Babe Littleford, I reckon the ain't no danger o' you a-havin' trouble with Black Adam; and you ain't likely, I take it, to make love to Babe."

"But Babe's the best one o' the Littlefords," declared Luke.

John Moreland frowned at his son.

"The ain't none of 'em fitten timber fo' archangels," he said, and reached for the leatherbound old family Bible. He opened the book at random.

"It's about time we was a-goin' to our rest, and we'll go jest as soon as we've had prayers, Mr. Dale. This part o' yore visit, I'm shore, will seem like home to ye."

Dale made no reply.

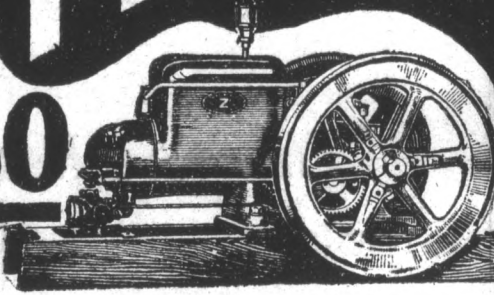
When half a chapter from St. Matthew had been laboriously but reverently read, the Morelands knelt at their chairs, and so did Bill Dale. John Moreland's bedtime prayer was very simple, and very earnest, and it had in it more of thanksgiving than of supplication. And a part of it certainly was uncommon—

"Bless the stranger with us here to-night, and all o' our kinfolks, and all o' our friends, and our inimies, the Littlefords—specially the Littlefords. Aymen!"

Dale was deeply impressed. He heard Mrs. Moreland dimly when she told him to let her know—she would hear him if he called—if there wasn't enough cover for his bed. Then he found himself alone with the stalwart chief of the Morelands.

(Continued next week).

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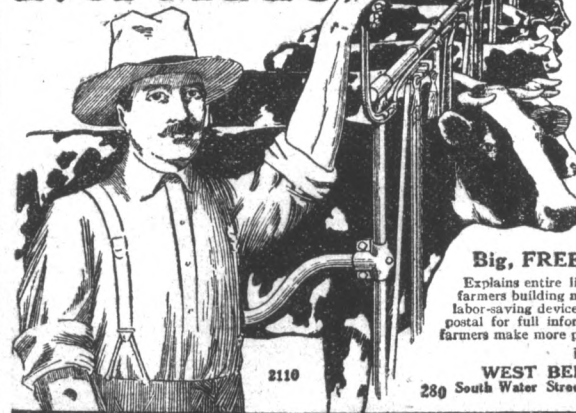
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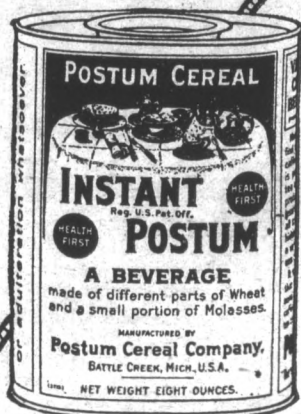
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Palm Sunday 1921

Our Weekly Sermon—By N. A. McCune

HOSANNAH in the highest!" sang rived in the mountain republic. In the the crowd the day that Christ entered Jerusalem. The Sunday before Easter has come to be known as Palm Sunday, in celebration of this event. In some countries, much is made of Palm Sunday. In 1914, the writer was in Rome, Italy, on Palm Sunday. Crowds of people filled the churches. There was a special service of palms in Saint Peter's Cathedral. The streets were thronged with people. The Roman church makes much of Palm Sunday, and the Protestant churches might well celebrate it more than they do. It is becoming to be observed, however, in a very happy way, in many churches, as the day when children are received into the church. This is sensible and to the point. The day can be explained to the child, as the anniversary of the time when earth's and heaven's king rode into the holy city, while the people acclaimed him. He was king, but he rode not as king, but as peasant. His palfrey was the most humble of beasts, the ass.

PALM Sunday has the significance of joy. Christianity is the joyous religion. Singing exclamations of wonder, usher in the Christ child. The angels sing to the shepherds. Mary breaks out into the Magnificat, when she learns of the coming of the King. Simeon and Anna are thrilled, when first they see Him. The rule of the Lord in this world has been attempted, never with complete success. Yet as we look back, the very attempts are among history's brightest spots. There was Savanarola in Florence. He triumphed for a while, and then his voice was silenced, his mighty person disappeared. But what picture in Italian history is more gripping, than Savanarola, at the burning of the vanities? Calvin made the attempt to have a city of God, in Geneva. He ruled hard, and he ruled well. But at last the enemies of so high an ideal prevailed, and the City of God was forgotten. Yet today, when the foreigner visits Geneva, his sojourn there is incomplete if he does not call at Calvin's church; and see the old high pulpit, where the prophet was wont to declare the word of the Lord. And in New England, the fathers made the attempt once more. People waded through the snow and sat in unheated churches, to listen to two-hour sermons, and declared they enjoyed it. Yet the Puritans did not build the kingdom "wherein dwelleth righteousness," as they had hoped to do. Jesus enters Jerusalem, acclaimed today, deserted tomorrow. Savanarola is hero today, and martyr tomorrow. Calvin's Geneva rises to his hopes only for a time, then slips back into the easier ways of the world. The Puritan is succeeded by a generation that thinks as much of movies as of morals. Were all these failures? Does Palm Sunday celebrate vanished hopes?

There is no failure with any honest effort. Sometimes the failure is only a stepping-stone to a higher form of success. No one would dare to say that the New England of the Puritans had failed. The Puritan conscience, thank God, is not dead. And the ideals of those days are still with us. New England blood has gone into every state in the Union. And in the very Geneva, where Calvin is buried, there was a ministry of mercy during the war that was probably not paralleled. German soldiers who had been wounded, were sent there in great numbers, and the Swiss cared for them. French soldiers in train loads, sick or wounded, were received and sheltered. In one month twenty thousand of such soldiers arrived.

THE mightiest movements of history have taken place in the name of Him who entered Jerusalem on an ass. Not that these movements have always been wise or beneficent. Far from it. The human element often spoils the divine element. But it shows the grip which the Galilean has had on men, all the fleeting centuries. Said Napoleon, "I think I know human nature somewhat, and I tell you that these men of antiquity were men, and I am a man. Alexander, Charlemagne and myself founded empires. But on what did these creations of our genius depend? On force. Christ alone founded His empire on love, and to this day millions would die for him." The Crusades were a wild and fantastic dream, from one viewpoint. From another angle, they were the most beautiful undertaking of the middle ages. Tens of thousands of Europe's best minds, greatest souls, and noblest blood went to Jerusalem, to rescue, if possible, the Holy Sepulchre from the hands of the Mohammedans. Last year twenty thousand Irish and one hundred thousand French journeyed to Rome, to attend a great religious festival.

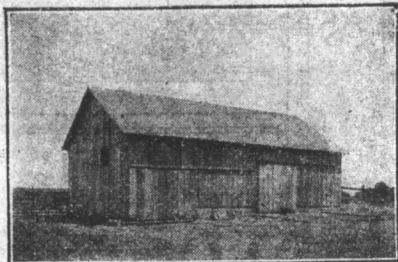
And the value of these religious festivals, like Palm Sunday, is, that they bring us face to face with our need of the great religious principle of today. A writer who is acknowledged in both Europe and America as an authority on the social movements of the day says, that we might have slid backward, in the past twenty years. Our literature is not as clean and helpful as it was. With the increase of wealth there has been a vast multiplying of selfishness. Pagan ideas stalk up and down the land, unashamed. There has been a revival of paganism, in America, he says. Well, what killed off paganism, centuries ago? Christianity. There was a life and death struggle in the early days of the church, and the church won, though not without some marks and scars that weakened it. And now nothing but the spirit of Palm Sunday, and all other Sundays, will avail to keep the nation where it belongs. There is but one real progress and that is growth of soul. "The world is not a vale of tears, but a vale of soul-making."

Sunshine Hollow Items

By Rube Rubicon

After Paul Jones went to the city he was proud of his income and considered himself a \$2,000 man, even if the money was all gone at the end of the year. He didn't think much of the country guys who make less money, even if they did get board, room and washing to boot. But now Paul is out of a job and city expenses are high. He is coming back to the farm to help. And he better not brag about his city wages to the country brother who has been working for less money but has a cellar full of feed and a middling bulky pile of stove wood.

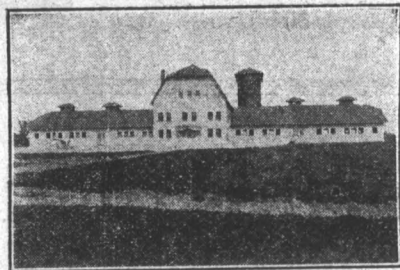
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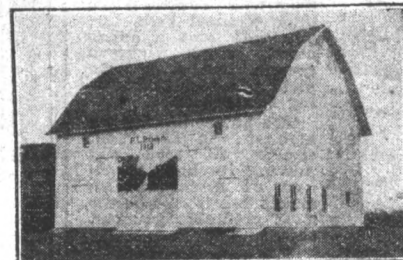
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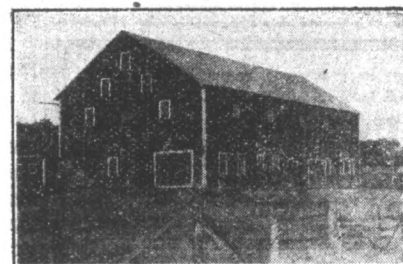
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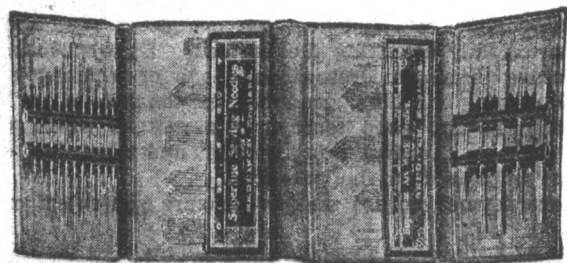
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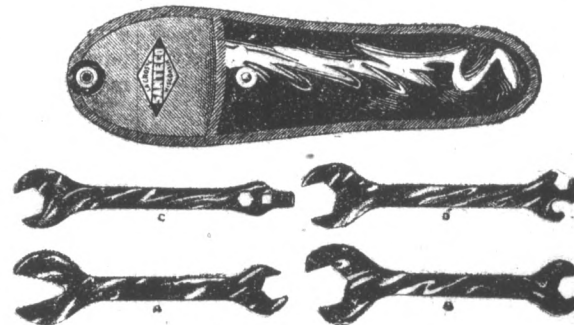
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MILL TO YOU

Many build as cathedrals were built, the part nearest the ground finished, but the loftier part, the part which soars toward heaven, forever incomplete.—Selected

Woman's Interests

Read Nature's Danger Signals

MICHIGAN folks were shocked recently to read of the death of three or four hospital attendants in a big city hospital from eating canned spinach. Not so very long ago similar poisoning occurred in Detroit, the deaths this time coming from eating canned ripe olives. Immediately a number of folks vowed a solemn vow never again to eat store canned goods.

As a matter of fact, a great many families would be safer eating the commercial canned product than trusting to home cooking. For alas and alack, mother is very often more careless and likely to poison her family, than are the commercial canneries whose fortune rests entirely on their reputation for turning out safe, palatable products. There is the woman whom I saw go out in the garden, pick a pan of peas, bring them in and shell them, and then "dump" them in a rusty pan to cook, without washing to remove the sand and earth, or even stopping to pick out the bits of stem and dried leaves. Another cook sent to the table home-made sausage, after three minutes' cooking, underdone and far more dangerous than properly canned commercial products.

For be it known to those cooks who think because they grow the vegetable and make the sausage that it must be safe, that the germ botulinus which caused the deaths in both cases, is found in dirt and was first discovered in pork, after it had for several years been causing the death of many folks by sausage poisoning! Its name, botulinus, comes from the Latin word for sausage, botulus. It is widely disseminated in nature, and your own garden truck may convey it to your table. Hence the necessity for carefully washing all vegetables before they are served, and making sure that every particle of dirt of whatever sort is removed.

Pork—all meat—should be thoroughly cooked, and if there is the slightest evidence of spoiling it should be very promptly thrown out. The toxin—poison—developed by the growth of the germ—is so deadly that several instances are on record of women dying from simply tasting a bit of the food before cooking it, to make sure it was not spoiled.

Yet in spite of the deadliness of botulinus, State Food and Drug Chief Fred H. Woodworth says that there is no reason for anyone to die of botulinism if the cook simply uses her two God-given senses, sight and smell. Two good eyes will tell an experienced cook whether the can gives evidence that the food has worked. If the can is swollen, showing that gas has been generated inside; if you can work the top up and down; if it is badly rusted, or if you can see that it has been punctured and resoldered, discard it. If your grocer will not take it back, write to the canner who put it up and tell him. He will be eternally grateful to you, as the worst blow his business could get would be to have a death traced to his products.

If the can looks all right, but the goods when turned out have any trace

of bad odor, or do not look the right color; throw it out. Don't do as some cooks do, "dope" it up with seasoning so the family will not detect the hint of spoiling. The odor from botulinus is so distinctive that if you once smell it you will never forget it. It is extremely disagreeable, and has been compared by some to rancid butter, or strong-smelling cheese. If you can add to this a suggestion of uncleanness you may get an idea of what botulinus smells like. The odor is so strong that there are cases where cooks have failed to notice a less marked odor, after having discarded a tainted can, and have cooked a can of vegetables also tainted, though not in such an advanced stage. The formation of gas is one of the first indications of the presence of botulinus, so if you open your own canned products and detect the presence of gas or leakage you will be wise to throw it out.

Don't make the mistake, however, of giving this discarded food to the pigs or chickens. One farm woman lost a valuable flock of chickens by feeding them a can of vegetables which she thought was just "beginning to work." Of course, not all spoiled food contains botulinus, but any spoiled food may contain it; and since the only way to know if it is present is by careful laboratory methods, your rule should be "safety first," which means to discard anything which does not look right, smell right, or taste right. If the food is "off color" you will know it.

In canning be sure that everything is thoroughly clean, perfectly sound, without specks or any bad spots, and then that it is thoroughly cooked. Presure, steam processing, if properly done, destroys spores and germs. So for this reason goods put up in a commercial canner, if properly managed are safer than those canned at home by boiling and not properly done.

Remember that botulinus is deadly. But like every other deadly thing, it has been furnished a set of warnings by nature. Read your signals, bad color, bad odor, bad taste, and you run no danger.

"From an investigation of the recent outbreak of botulinism in Grand Rapids, due to eating canned spinach," says the Food and Drug Department, "it was found that the food material in question had been entirely used up or thrown out. This necessarily hampers the placing of responsibility for deaths on the suspected material. However, the remaining cans of spinach have been examined by various workers and the preliminary work, so far, is convincing that there is bacillus botulinus as well as its toxin present in the spinach. The Food and Drug Department in cooperation with the United States Department of Agriculture, Bureau of Chemistry, are taking adequate steps in removing from the market all shipments made by this company until it can be determined that the food material in question is safe."

Altering Patterns

AN attempt to buy a pattern in the average department store is like trying to get an enameled basin at a ten-cent-store bargain sale. Women who never thought they could hem a dish towel are boldly attacking the problem of making their own dresses. With a good sewing machine, good commercial patterns and good taste, sewing isn't such a dreadful thing. First and most important is the pattern. There are several houses making good ones today, patterns of which you may be absolutely sure that the various pieces will go together properly, and if you have an average figure, the completed garment will fit satisfactorily. So in selecting your pattern, take one of which you are sure. Do not, for the sake of saving a few cents, buy a pattern which will not go together, and whose proportions are not true. Be sure you select one of the right

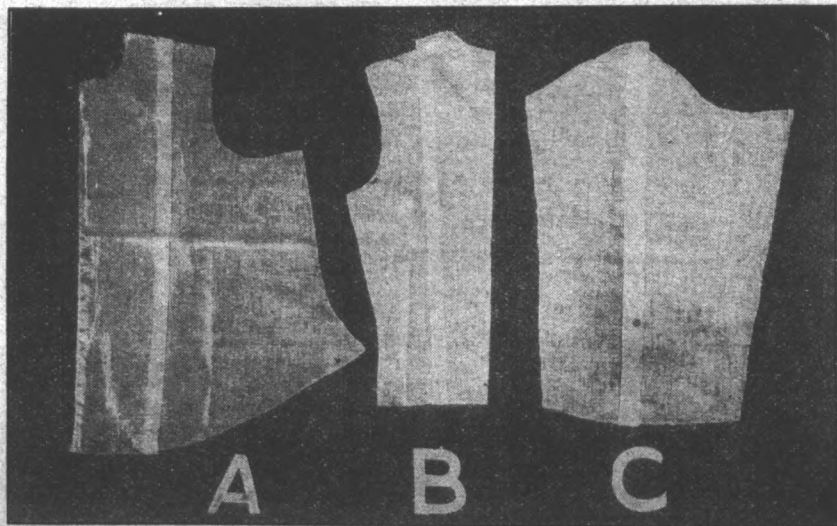


Fig. 1.—A and B Show Fold in Pattern to Cut a Smaller Bust Size. C—Pattern Altered to Decrease Size of Sleeve.

size. For waists and dresses, buy by the chest measurement taken just under the arms. For skirts, buy by the hip measurements. The length of the skirt, length and width of waist pieces and length and width of the sleeve may be easily changed if they are not correct.

After removing the pattern from the envelope, examine each piece carefully, and lay aside all pieces that you will not use. There are usually pockets, bands or occasionally a yoke which you are not planning to make. Then again, you are making an unlined garment and the pattern includes a lining. Sort out all these pieces so as to be sure you do not cut one by mistake and waste cloth. If you use a lining, separate the lining and outside pattern.

If you find that the pattern must be altered, measure both person and pat-

tern carefully and find out just how many inches, or what fraction of an inch the change must be. If the bust measure must be increased, cut patterns for both back and front, down from the center of the shoulder to the bottom of the waist. Then separate the two parts of each piece of pattern one-fourth of the entire amount to be increased. For instance, if the bust is to be made two inches larger, first cut the pattern, pull cut portions one-half inch apart, and use this size for the new measure.

and measure, measure, measure. If you are a beginner, baste plentifully and use plenty of pins. Let the expert sewer take the chances. Don't hurry and don't guess. (Illustrations by courtesy of the Extension Department, Michigan Agricultural College).

may be laid, and note the notches for joining. After any necessary alterations are made, lay each piece on the cloth before cutting a single one, changing them about until you are sure that you are cutting in the way to save the most cloth. You must be careful to see that every piece is laid the right way of the goods, as given in your printed directions. See if you can save by cutting some pieces on a fold, or if it would be better to cut them from a single thickness of the goods. After the pattern is laid on and each piece pinned securely, mark all notches and perforations with tailor's chalk, or by taking a stitch with the needle and thread. Notches cut in seams are apt to ravel and fray. Success in sewing depends upon accuracy and neatness. Keep your tape measure or rule at your right hand,

Success in sewing depends upon accuracy and neatness. Keep your tape measure or rule at your right hand,

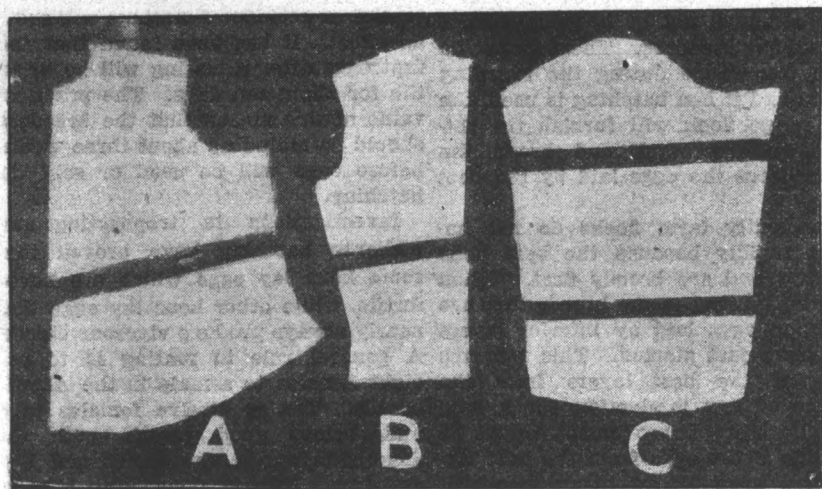


Fig. 2.—A and B—Method of Cutting Pattern to Lengthen Waist. C—How to Cut Pattern to Lengthen Sleeve.

tern carefully and find out just how many inches, or what fraction of an inch the change must be. If the bust measure must be increased, cut patterns for both back and front, down from the center of the shoulder to the bottom of the waist. Then separate the two parts of each piece of pattern one-fourth of the entire amount to be increased. For instance, if the bust is to be made two inches larger, first cut the pattern, pull cut portions one-half inch apart, and use this size for the new measure.

To decrease the size of the bust, lay a fold in the pattern from center of shoulder to bottom of waist one-fourth of the amount to be decreased, as shown in diagrams A and B, Fig. 1.

If the waist is to be lengthened, cut the pattern in two on a line two inches above the waist line. First hold the pattern to the person and mark where the waist line comes. After cutting, separate the parts of the pattern the amount it must be lengthened. (See A and B, Fig. 2).

The waist is shortened by laying a fold deep enough to take out the extra length, making the fold two inches above the waist line.

Sleeves are lengthened and shortened in the same way, except that two cuts or two folds are made, one above and one below the elbow.

In altering the width of the sleeve, make one fold directly down from top to bottom, starting at the middle of the shoulder as shown in diagram C, Fig. 1. If sleeve must be widened, cut from the middle of the shoulder to bottom.

If patterns are to be made larger, necessitating cutting them, it is better for the beginner to lay the cut parts on a large sheet of paper and cut a new pattern than to trust to pinning them on the cloth.

Before cutting out any part of the garment, study your pattern as a whole. Read all directions printed on the envelope. Be sure to notice whether seams are allowed or whether you have to allow them. Examine the piece to see which way of the cloth they

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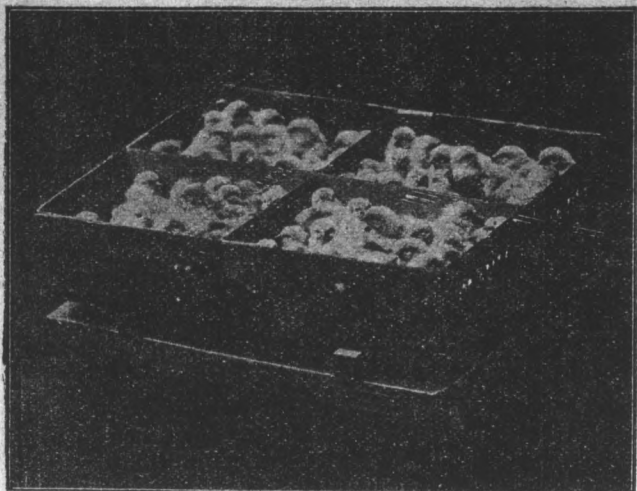
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Farm Poultry

Mating the Breeding Flock

ON many farms the problem of improving the poultry has been complicated by the lack of one fenced enclosure to confine the best hens during the breeding season. Only one colony house and a fenced yard is needed. In this enclosure can be placed a number of the best hens mated to the best male bird that can be raised or purchased. Then the eggs from this small flock can be used to develop the breeders for the coming year.

On most farms there will be many hens that can be classed as useful birds although not quite good enough to use as breeders. These can be given free range during the breeding season and if hen hatching is used, the free range flock will furnish the setting hens to hatch and brood the chicks from the eggs laid by the best stock.

Frequently farm flocks do not improve rapidly because the best hens lay first and are broody first. When the best layers become broody they are set upon eggs laid by inferior layers that have just started. This removes some of the best layers from the chance of egg production for a long period. More improvement would be possible if the eggs from the best layers had been placed in an incubator and these hens allowed to continue laying to reproduce themselves as often as possible during the breeding season.

The number of roosters necessary to mate with a breeding flock is a debated question and, of course, depends on the individuality of the male birds. The male is sometimes blamed for a lack

of fertility that is due to the hens. The male is half the flock but it is the hens that produce the eggs. If the hens are overfat or lacking in vigor they will not produce good hatchable eggs even when mated with the best male birds.

A mating is not necessary for each fertile egg as experiments have proved that fertility will be present in eggs laid by a flock as long as two weeks after the males have been removed. This means that the breeder must wait about two or three weeks before the results of accidental matings will show no effect. It has been found that the first eggs after a mating will be infertile for about ten days. The practical value of this means that the breeders should be mated up about three weeks before eggs will be used or sold for hatching.

Investigations in trapnesting and pedigree hatching have proven that some hens lay eggs which are never fertile, while other hens lay eggs that nearly always produce vigorous chicks. A general rule in mating is to use eight females to a male in the Asiatic breeds. Ten or twelve females to a male brings good results with the American breeds like Rocks and Wyandottes. Fifteen females to a male is all right with Leghorns. In many cases a larger number of females per male have brought very good results but, of course, they might not be depended upon. When the fowls are on free range the fertility seems to run better with a small number of males than when the breeding pens are closely yarded.—R. G. K.

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How to Raise Goslings

THE growing popularity of geese in this country makes it advantageous for every farm woman to study the subject of goose raising. If she wishes to make the most of her poultry and gain the greatest profits from the food which the farm produces. While hens are almost an essential because of the feed which they save, geese in connection with hens will bring in surprising returns for the time and money invested. We have found that they not only keep themselves during the summer and fall, on the grass and waste fruit from the orchard, but the other poultry, especially the ducks, will eat a much greater amount of herbage because of running with the geese.

Because of this fondness for green stuff, the goslings are raised much more cheaply than other fowls and it is not difficult to succeed with them if a few simple rules are followed. I usually use hens for hatching the eggs as incubators do not give very satisfactory results. In fixing the nest, I cut a sod or put some dirt in the bottom of a box, then cover with hay or straw. After the first week or two, sprinkle with warm water about every third day until the last week. Then they should be sprinkled every day. It will take about five weeks for the eggs to hatch when set under hens. A medium-sized hen can cover four eggs.

As soon as the little birds are dry, take from the hens until all are hatched. If it seems best to keep the hens for mothers, shut in a coop so that the goslings cannot wander away as they do not heed the call of the hen. If one prefers to raise without a mother, and I usually use that method, wrap warm ly in a blanket, then fill a jug with

warm water and set in the middle of the box where the goslings can crowd about it. Cover all warmly with blankets. Be sure they are kept warm, though not too warm if the weather is hot, for they are very tender the first few weeks.

WHEN they are from twenty-four to thirty-six hours old, I give the first feed. Even then they will never eat much and sometimes will eat only grass. They never have the appetites for grain that young ducks develop. They should be fed alone as they cannot eat as fast as ducks or chicks and there is danger that they may starve to death. Bread and milk makes the best feed, although I sometimes make a johnnycake of corn meal and middlings with a little soda and moistened with milk or buttermilk, then baked quite hard. When ready to feed, moisten with milk or water but do not have it sloppy. If it is possible to feed the bread, however, it will give much better results and even a considerable expense for the first few weeks will pay in the end.

If they can be kept from indigestion and from getting wet or cold, there should be little difficulty in raising them. It is well to feed about five times a day for the first two weeks, gradually lessening the feeds until by the time they are about two months old the morning and evening feeds will be enough. They require a great amount of pasture, however, and if the weather is wet, they must be given plenty of chopped grass and weeds. They should have water deep enough so they can prefer to raise without a mother, and they will not get wet. It is better not to give it at meal time. If the weather

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is at all favorable, put on the grass every day for the little feet will spread out if kept long on a board floor. One must be careful, however, that the little fellows do not become cold or damp.

If for any reason they are wet, wipe dry, then wrap warmly and let them dry by the heat of their own bodies. I have never had much success in raising them after they became real wet. If they can be kept well and strong until they begin to feather, there is little trouble to raise them. After they are feathered they can shift for themselves and may be turned on pasture with only a little grain.

If it is possible to spare an old goose to raise the little ones, it will be more satisfactory than any other method. They are not only on guard every moment of the day and night, but they also find just the food which the goslings need and will raise them on almost nothing in the way of grain. Strange to relate they will take them in the wet grass or on the water and feed them the coarsest feed while the little ones grow more rapidly than with the best of care.

The goose can cover twelve or fifteen eggs and will hatch in about four weeks so it is well to let them lay until the end of the season, probably the middle or last of June.

When the goslings begin to hatch, take them away as soon as dry or the goose may leave the remaining eggs. When all the eggs are hatched, shut the mother in a coop for a few days until the legs are strong enough to carry the fat bodies, for the old goose will lead them long distances. Even after she is let out, a shelter should be provided for nights and wet weather. It is sometimes necessary to drive her into this as she is quite independent about caring for the little birds. I always feed several times a day as they will grow faster than if left to pick for themselves.

No mother seems to enjoy her babies more than an old goose, and she will care for them until they are almost full grown. Last spring we had a strange example of motherly love. I bought some goslings which were all feathered and almost grown. They were placed in a yard by themselves for a few days, then let out with the others. One of the old geese evidently decided on adoption as soon as they arrived for she mounted guard on the other side of the fence and waited patiently until she could get to them. They had never had a goose mother, however, and the strange white bird terrified them. They ran and she chased them, until, exhausted at last, they sat down to rest. She mounted guard and evidently in some strange way she made them understand her affection for after a time they all started off together. From that time on they were inseparable until the goslings were fully matured. Had it not been for the knobs on their bills, it would have been impossible to tell the mother from the daughter.

Ducklings need no feed until they are from twenty-four to thirty-six hours old. For the first week they should be fed five times a day; after that the number of times may be decreased to three times until they are two to three weeks old. A good ration to begin with consists of a mixture of equal parts, by measure, of rolled oats and bread crumbs, with three per cent of sharp sand mixed in the feed, gradually changing from less of the bread to more of the oats, and adding bran, and later corn meal. This feed should be made quite moist, either with milk or water, and it is also desirable to cut up green feed, such as lettuce, clover, alfalfa or lawn grass, adding to the above mash the amount of fifteen per cent. If milk is not available for use in fixing the mash, after the first week add a small amount of beef scrap.

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Our Boys' and Girls' Department

Giving Baby Chicks Good Care

By Earle W. Gage

MANY of our boys and girls will have baby chicks this spring, and what fun it is to care for these fluffy, little fellows! They must be kept warm and comfortable, have proper feed and water, and be carefully watched to detect any sickness and disease that may appear, if they are to have the necessary start in life to enable them to grow and develop into large, hardy chicks and mature fowls.

Most boys and girls set eggs and hatch their chicks under hens, which is the best way unless a very large number of chicks is wanted, in which case an incubator is sometimes used. When the mother hen is hatching she should not be disturbed except to remove the shells, unless she becomes uneasy and steps on or picks the chicks. If so, they should be removed as soon as they are dry. Place them in a basket or box lined with flannel or some other soft material and cover the top, keeping the basket in a warm place until the remaining eggs left under the hen are hatched.

Every poultry club member should always bear in mind that newly-hatched chicks are delicate little fellows and must be treated with great care. They hatch in a temperature of 102 to 105 degrees, and their first and most important requirement for the next forty-eight hours is warmth.

As soon as the chicks are taken from the nest or incubator and placed in the brood coop with the mother hen, or in the brooder, they must be kept warm and comfortable until they are old and strong enough to run about and withstand the changes of weather.

When brooded by hens they remain under the mother of their own accord nearly all the time for the first two or three days. If they are to be raised in a brooder, this should be warmed to the proper temperature, about ninety-five degrees, regulated and made ready in advance. The same applies if day-old chicks are bought; always have the brooder ready so that when they reach you the chicks can be placed at once in the brooder, where it is warm, roomy, and comfortable.

If the mother hen should die or in case the brooder is ordered and fails to arrive in time, boys and girls are sometimes at a loss to know what to do with the chicks. In such a case a temporary or home-made brooder may be made as follows: Take a box, without cover, about eighteen to twenty-four inches square and about ten inches high. In one side next the bottom cut an opening three inches high and eight to ten inches long for the chicks to pass through. Protect this opening with a strip of woolen cloth; tack at the upper edge, having perpendicular slits cut from the lower edge to within one-half inch of the top to allow the chicks to pass through. This box covered over the top with a heavy blanket or any warm cloth may be used without heat when the room temperature where the brooder is located is seventy-five degrees or over. If the temperature is lower or the chicks appear to be cold, take a large bottle or jug and fill with hot water and place inside the box, refilling it as often as necessary to keep the chicks warm and comfortable.

Baby chicks should not be fed for more than twenty-four to thirty-six hours after hatching, and will not suffer if

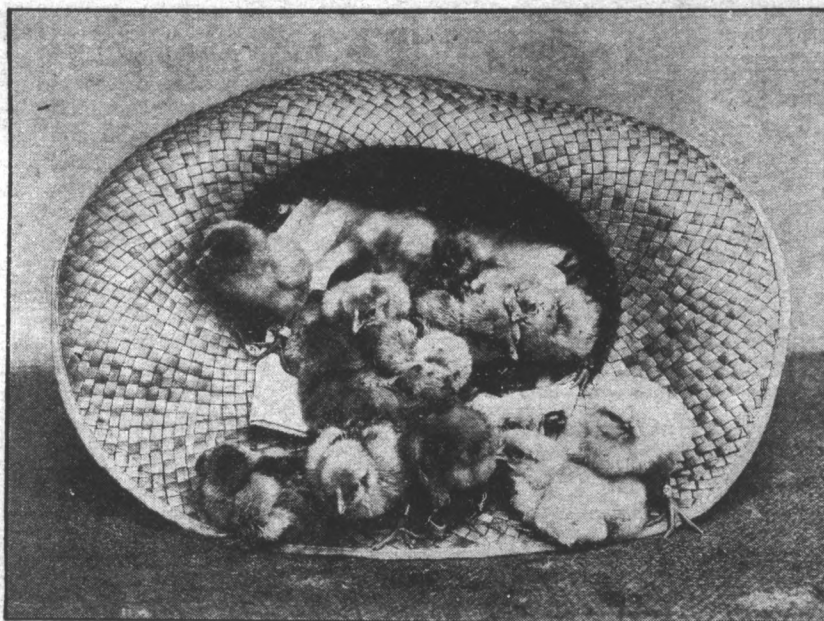
given no feed until the third day. The yolk of the egg which is absorbed by the chick when hatching furnishes all the nourishment required during that time. After the third day they should be fed four or five times daily for the first week or ten days, but only a small amount at a time. Chicks will grow faster if fed four or five times daily than by feeding three times daily, but they should be given only what they will eat up clean each time. Over-feeding will do more harm than under-feeding; therefore, care should be used and only a proper amount given each time to satisfy their hunger and keep them exercising.

The first feed should consist of johnnycake or hard-boiled eggs, mixed with stale bread (not moldy) crumbs of pinhead oatmeal, using a sufficient

hopper, where it will not be wasted, and left before the chicks at all times.

As soon as the chickens are old enough and will eat whole wheat, cracked corn, or other grains, the small-sized chick feed may be discontinued and the larger-sized grains fed instead. These are known as "developer grains" and may be bought at most any feed store. In addition to the grain they must be supplied with grit, oyster shell, and charcoal at all times, and the better way is to place these in a hopper, hanging it in a convenient place where the chicks may help themselves. If chicks are kept in confinement they must be furnished a liberal supply of tender, green feed, like lawn clippings, lettuce leaves and such other things as are available.

Whenever possible, however, place



amount of the latter to make a dry, crumbly mixture. These feeds or combinations of feeds may be used with good results for the first week; then gradually substitute for one or two feeds daily a mixture of equal parts of finely cracked wheat, corn and pinhead oatmeal or hulled oats, to which may be added a small quantity of broken rice, millet, rapeseed, and charcoal, baby chick size.

When the chickens are eight to ten weeks old add one part of ground oats and increase the meat scrap to one part. This mash may be placed in a

the chicks on a grass range where they can have exercise and plenty of green feed, catch bugs, worms, etc. Chicks that are allowed to run on a grass range are usually strong and thrifty and will grow much more rapidly than those that are kept confined. Buttermilk mash is a very good ration to keep in the hopper before the chicks as this is one of the most economical and satisfactory developers, though if sour or buttermilk is available, this answers the same purpose, and allows reduction of the meat scrap by one-half.

How I Raised My Pig

By Ivan Galpin, Ann Arbor, Michigan

WHAT shall we raise? This was the first question to come up at our first club meeting. A few suggestions were made and talked over by members and parents. The ones to be favored the most were, calf clubs, corn clubs and pig clubs. Seeing that pigs are quite cheap things to start in with and that they were well adapted to our locality, they were favored and approved by a large majority.

The next question to come up was, "What kind of pigs shall we raise?" Of course, some wanted different kinds but the "Durocs" were favored by a large number because they mature so rapidly and were liked by the farmers of our locality.

Mr. Lyons, our club leader, found a place in Hillsdale county, where we

could buy about thirty pigs that were pure-breds and owned by one man. They were disposed of to twenty-six club members, as some of us raised a pair. The way we chose them was— all the numbers from one to thirty were placed in a hat and well mixed. Each member then drew one or two numbers, and had the choice corresponding to the number drawn.

My choice brought me a boar weighing thirty-seven pounds and a gilt weighing thirty-four pounds. The two cost me \$33, which I borrowed of a bank for a term of six months. From then on it was individual work, except for a few suggestions gathered from others and from material sent to us by Mr. Lyons.

About the first thing I did to my

pigs was to overfeed them, which put them back quite a little, as they would not eat well for quite a while. After they got to eating all right again they ate so much alfalfa that they got poddy, which made them look real bad.

It was not very long before I had to separate my pigs and keep my boar in a tight pen where there was a little grass. He at once began to lose his poddiness and really began to look like a good pig. My gilt was getting such a large pod that her back was getting so weak I had to take her off the alfalfa also. In a short time it began to go away and her back began to strengthen up and get straight. The next thing to happen was for my boar to get sore eyes. I began at once to bathe them in warm water and boric acid because the county fair was to begin soon and I wanted to show my pigs. His eyes soon got well, which was the last trouble I had. They both made good gains, but each month the boar would gain a little more than the sow.

THE county fair was to be quite an event, and the club wanted to make a good showing, so we made arrangements to get twenty-five of our pigs there. This made quite a showing for our Dixboro club. Besides our pigs we equipped a booth with vegetables and canned fruit.

Just before the fair I used to give my pigs a bath with soap and warm water. They seemed to enjoy it a great deal, as they would lay down every time I did it. I also used some oil on the hair to make it smooth and glistening.

The judging day brought us better luck than we expected as we won all the young boar prizes and one gilt prize from the other clubs. We won second prize on our booth and first prize for having the largest exhibit of all the clubs. Our girls' canning club also won first prize on their canning demonstration, besides individual prizes on cans of fruit.

At the end of the contest with the valued prizes, my pigs gained me a little over \$100 outside of expenses. I intend to sell my boar soon, but will keep my gilt and breed her for a litter of spring pigs, unless a large price is offered for her. They are both for breeding purposes and so are not fat at all. The boar weighed two hundred and ten pounds, while the sow weighed one hundred and sixty-seven pounds at the end of the contest.

It would be useless to try and enumerate the benefits outside of money which I have derived from this work, but I have enjoyed it the most of any work I have ever been in. One of the greatest benefits I have gotten from it is the value of well-bred stock. Next year I am planning on going into this work with all my heart and soul. I am going to see just how many other boys and girls I can get interested in it so that they will have the opportunity of all the benefits I have gotten from it.

SEED OAT PRICES.

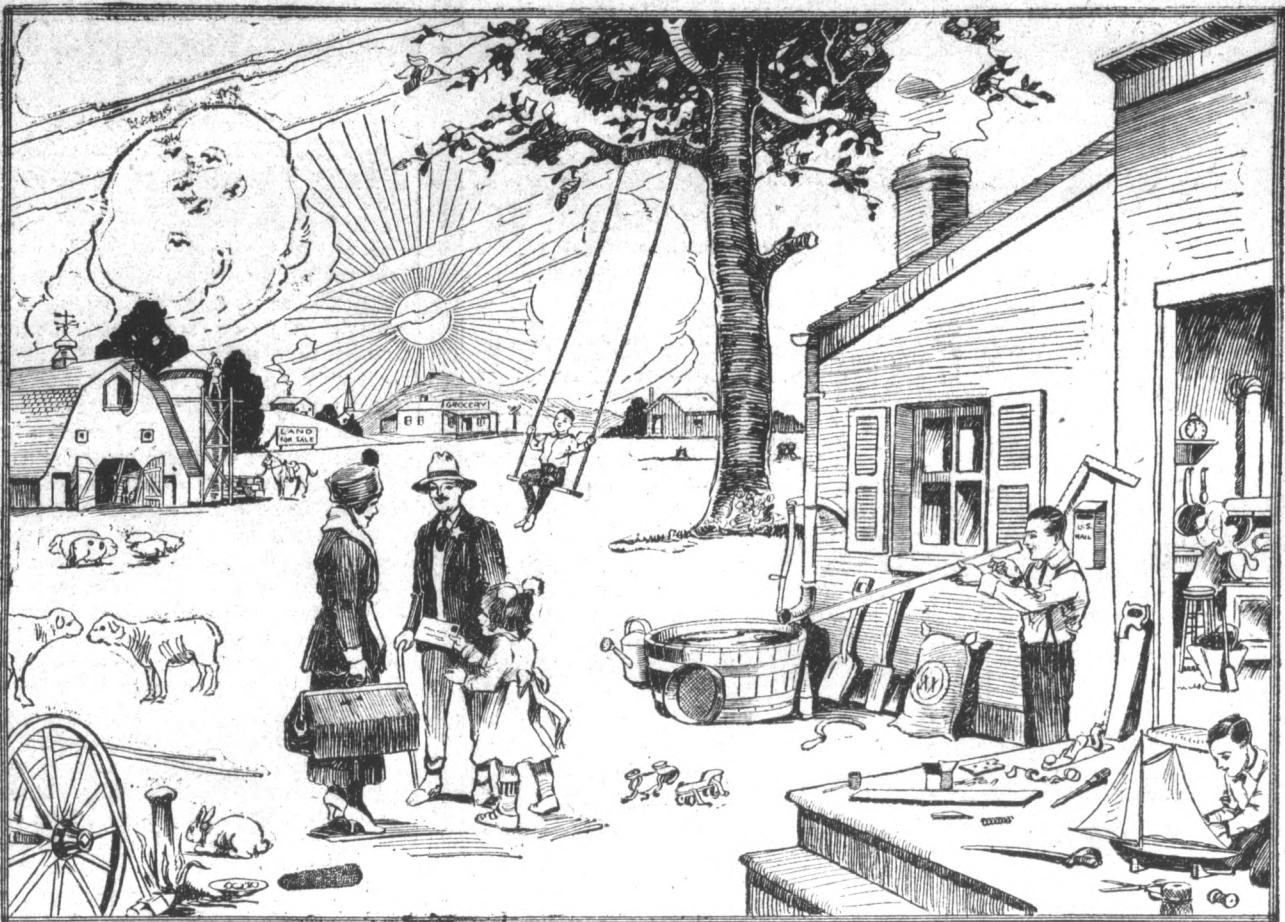
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The Detroit Journal's \$1,000 Puzzle Picture

FOR R. F. D. READERS ONLY



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How Many Names of Objects or Articles in This Picture Start With the Letter "S"

The solution of the "S-Word" puzzle picture depends only on your ability to find the list of names of visible objects and articles in this picture that begin with the letter "S". Fifteen cash prizes will be given for the 15 best answers to the Puzzle Picture. The answer having the nearest correct list of names will be awarded first prize. The second nearest correct list the second prize, etc. Sit down and see how many there are in the picture. Just as soon as you have made up your list, send it in. You can just as well get one of the prizes.

It costs nothing to take part in this Puzzle Picture game. It is not a subscription contest, and you do not have to send in a single subscription to win a prize. If your answer to the "S-Word" Puzzle Picture is awarded first prize by the judges you will win \$35.00, but if you would like to win more than \$35.00 we are making this special offer, whereby you can win bigger cash prizes by sending in one or two yearly subscriptions (maximum two subscriptions) to the Detroit Journal by mail at \$4.00 (R. F. D. only). They are Bonus rewards for boosters.

You Can Win \$1,000

Here's how. If your answer to the "S-Word" Puzzle Picture is awarded first prize by the judges and you have sent in one yearly subscription to the Detroit Journal by mail at \$4.00 (for R. F. D. only), you will receive \$500.00 instead of \$35.00.

Or if your answer to the "S-Word" Puzzle Picture is awarded first prize by the judges and you have sent in two yearly subscriptions to the Detroit Journal, \$8.00 in all, you will receive \$1,000.00 in the place of \$35.00.

How is that for a liberal offer? But look! We will give extra amounts on all prizes. If your answer is qualified by a \$4.00 Subscription to the Journal and you win second prize you will receive \$250.00, and if you have sent in two yearly subscriptions and you win the second prize you will receive \$500.00, and so on down the list of prizes. It takes but two new or renewal subscriptions to qualify for the big \$1,000 Reward. Absolutely. Two subscriptions and first prize wins \$1,000. You can do this with very little effort. Your own subscription will count, or subscriptions to start on some future date. However, in fairness to all, subscriptions mailed prior to March 16th, the opening day of the contest, cannot be counted toward qualifying for the Bonus Reward and requests for credit in the Picture Puzzle Game must accompany each subscription.

Observe These Rules

1. Any man, woman or child living on a Rural Route in the State of Michigan, who is not an employee of the Detroit Journal, may submit an answer. It costs nothing to try.

2. All answers must be mailed by postoffice closing time April 2nd, 1921, and sent to Roy M. Haan, Puzzle Manager Detroit Journal.

3. All lists of names should be written on one side of the paper only and numbered numerically. Write your full name and address on each page in the upper right hand corner. If you desire to write anything else, use a separate sheet.

4. Only such words as appear in the English Dictionary will be counted. Do not use obsolete words. Where the plural is used the singular cannot be counted, and vice versa.

5. Words of the same spelling can be used only once, even though used to designate different objects or articles or parts of objects or articles. An object or article can be only named once.

6. Do not use hyphenated or compound words; this refers to all words formed by the combination of two or more complete English words.

7. The answer having the nearest correct list of names of visible objects and articles shown in the picture that begin with the letter "S" will be awarded First Prize, etc. Neatness, style or handwriting have no bearing upon deciding the winners.

8. More than one member of a family may compete, but only one prize will be awarded to any one household.

9. In the event of a tie for any prize offered, the full amount of such prize will be awarded to each tied participant.

10. Three Detroit business men, having no connection with the Detroit Journal, will be selected to act as judges, and participants agree to accept the decision of the judges as final and conclusive.

11. All answers will receive the same consideration regardless of whether or not a subscription for the Detroit Journal is sent in.

12. Anyone taking part in the Picture Puzzle Game may take advantage of any advertised subscription offer of the Journal when sending in his subscription.

13. The announcement of the prize winners and the correct list of words will be published in the April 16th issue of the Detroit Journal.

THE PRIZES

Winning Answers Will Receive Cash Prizes According to Table Below.

	When No Subscriptions Are Sent	When One Subscription Is Sent	When Two Subscriptions Are Sent
1st Prize..	\$35.00	\$500.00	\$1,000.00
2nd Prize..	30.00	250.00	500.00
3rd Prize..	25.00	125.00	250.00
4th Prize..	20.00	100.00	200.00
5th Prize..	15.00	50.00	100.00
6th Prize..	10.00	40.00	80.00
7th Prize..	5.00	30.00	60.00
8th Prize..	5.00	20.00	40.00
9th Prize..	3.00	15.00	30.00
10th to 15th Prize..	2.00	10.00	20.00

Address ROY M. HAAN
Puzzle Manager

THE JOURNAL :: Detroit, Michigan

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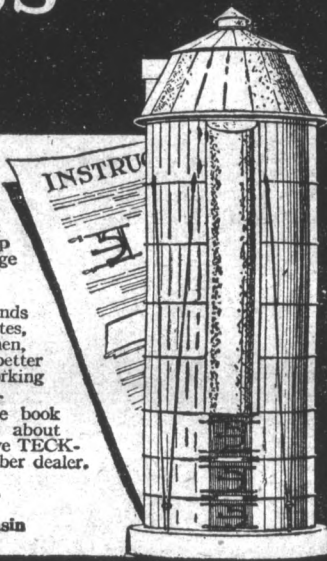
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Dairy Farming

April Dairy Work

A DAIRYMAN who was criticized for buying lemonade instead of milk at a restaurant replied that he had plenty of good milk at home and enjoyed the change when away. But he said that he used butter at home and away from home and didn't believe in using substitutes at any time. He claimed lemonade was all right as a change from milk, but oleo never tempted him from butter.

Farmers who argue in favor of butter substitutes do their business a lot of damage in order to save a few pennies on the food consumed at home. Experiments have proven that butter contains elements which substitutes cannot contain and these elements are needed for health and bodily development. Too many of our best families in the cities, with ample means to enjoy good butter, are buying substitutes and a lot of publicity will be needed to make them return to buying butter.

One farmer suggests a law to compel the use of pure-bred bulls. If such a law were enacted it might lead to a lot of other laws and some of them might not turn out as good as they looked. We now have plenty of laws on the books and what we need most is to pay attention to the law of nature and common sense and each man be his own sheriff to see those laws are obeyed. It is a sure thing that pure-bred bulls are the right thing but most good farmers had rather use such bulls from choice and not because the law says they must do it.

Some farmers have found that milking machines will pay with small herds of from four, eight and ten cows. Of course, it is understood that they must be good cows. Whether such machines will pay with small herds or not depends on the farmer and his system of management. In general the farmer with only four to six cows cannot spend too much for equipment if he has to pay interest on the investment and lacks the best opportunities of selling milk at a profit.

To lift a calf into a truck, stand on one side of the calf and have a helper on the other side. Take hold of hands under the calf and lift it up and over. In this way a veal calf can be lifted with little effort and no injury or rough handling of the animal.

It does not seem as if the price of veal on the hoof is going to compare favorably with the market price for veal when the consumer buys it. Why not butcher the calves at home and try selling them to restaurants or divide

them and sell to private consumers. One local dealer tells me that he could afford to pay more for meat if his customers would buy it all. But he finds they all want the finest cuts and this leaves him with other parts on his hands.

DAIRYMEN generally hate to butcher calves. But one knock and they are ready for the knife and it is really not as cruel as shipping them alive to a distant market. It is rather hard to do it at first but not much harder than killing a chicken after becoming used to it. Not much equipment is needed. The heart and tongue can be kept for home use. There will be considerable blood for a poultry mash. The liver is usually demanded by local dealers or buyers for restaurants and should be delivered with the carcass.

One dairyman in our section tells me he is making as much money this year with low-priced feed as he did last year on the high-priced rations. Of course, the checks are not as large and it looks as if the business was not as good but he figures his costs carefully and does not seem to be discouraged.

The cost of labor is less in the dairy business and most of the dairymen in our region are able to get better men than have been available for about five years. When labor conditions improve in the cities it may be more difficult to obtain men. But right now there are men who have worked with cows, who are out of work and some of them may be induced to return to the farm, but stay permanently.

A dairyman cannot develop his business too rapidly and depend on plenty of labor because it can be found now. Many of the transients who appear anxious for jobs on a dairy farm now will be the first to make tracks for the city when the old jobs come back. The fact that there are plenty of men gives the farmer a chance to choose help more carefully. It does not pay to hire poor help at any time as they are the most expensive.

Watch that new hired man milk and see if he does thorough work. Nothing is more costly than hired help that steadily dry up the cows by stopping the process of milking before the flow has ceased. A young boy with undeveloped hand muscles should not be trusted with heavy-milking cows. He may soon have very sore hands and prefer to half milk the cows rather than own up that he can't do it right.



This Method of Milking is Rapidly Growing Popular.

A WELL-TRAINED dog may be a help in driving cattle, but many dogs bring up the cows on the run and worry them. Such methods are not good for milk production and irritate the disposition of animals which are naturally very nervous. A dog barking loudly around the barn at milking time is not a good business proposition. I believe it pays a farmer to drive in the cows himself when they are near the barn and not let the dog bother them.

If you have a sick cow, give the veterinarian half a chance to save the animal by calling him early. When a cow is devitalized from sickness and half dead, the veterinarian may be blamed for losses, though not responsible. Cows take larger doses of medicine than men, and medicine costs money. The veterinarians do a lot of good in the live stock business and farmers can learn much from them. Their fees should be promptly and cheerfully paid. The writer does not know any vets that are profiteers or any that have become unduly wealthy from their practice.

IS DAIRYING FINDING ITS PLACE?

DAIRYING in Michigan received another boost during the last week of February, when the Michigan Allied Dairy Association met in Grand Rapids. Contrary to tradition, dairying stepped out of its accustomed sphere and made its debut into society. Right into the lobby of one of Michigan's finest hotels, the dairy cow, its products and producers, rubbed shoulders with the traveling salesman, politicians, society women, travelers and all. There submitted to Michigan's most skeptical group, dairying was received with open arms. The dyspeptic traveling salesman marveled over the food value of dairy products and proceeded to the dining-room to order a dairy diet. The cocoa cola, bevo and ginger ale sponges retired to the bar and found it transformed into a fountain of youth and vitality. For the first time since May 1, 1918, they found satisfaction in the healthful Holstein highballs and Jersey cocktails and drank toasts of allegiance to dairy drinks for the rest of our alcoholic drouth. To shorten a long story, the sales of dairy products were increased fifty per cent.

The stimulus to all this interest and consumption in dairy products was brought about by the exhibit put on under the supervision of Professors Goodwin and Brownell of the Dairy Department of the Michigan Agricultural College. The entire lobby of the hotel was given over to the exhibit which was very artistically arranged in an educational display, showing all phases of dairying from producer to consumer, with special emphasis on the food value of dairy products in comparison with other foods.

Some of the problems brought out in the exhibit were the production and care of cream on the farm, value of a better product, causes of undesirable cream, marketing problems of butter and cheese, method of determining the keeping qualities of milk, materials entering into an ice cream mix and many others.

A wonderful result was accomplished in the exhibit which showed to the hundreds of producers and manufacturers, who assembled for the convention, the value of advertising and how easily dairying lends itself to advertising and at the same time giving to the consumer the value of dairy products.

When we consider ourselves as farmers for life, and make farming a practical study, then we will take pride in our farms and live stock.

Don't compel the women-folks to open and close two or three big gates through the cattle-yards every time they go out to look up eggs.

The same factors which have made the De Laval Separator famous are back of the DE LAVAL MILKER

Just as the De Laval Cream Separator established new and higher standards of efficiency and construction, so is the De Laval Milker establishing higher standards among milkers. It is strong; durable; simple in construction and operation; easy to keep clean; saves time, and increases production.

The same policies which have made the De Laval Cream Separator the most popular and most widely used in the world are back of the De Laval Milker and are responsible for its rapidly increasing use.

Long ago the De Laval Company recognized the need for a mechanical means of milking, to place the dairy business on a machine basis. For over twenty years experiments have been conducted, and after many years of research, test and use, and not until the De Laval Company was absolutely sure its milker was actually a better way of milking, was it offered for sale. Now after four years of commercial use, in all sections of the country, owners are proving that it not only saves time and eliminates the drudgery of milking, but it actually increases the flow of milk even over good hand milking.

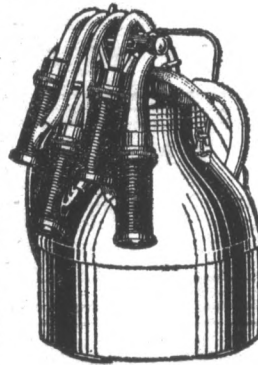
Service also helped make the De Laval Separator famous; and it is service back of the De Laval Milker that is helping

to create preference for it among dairymen. This means that the De Laval Milker will be properly installed, that you will be thoroughly instructed in its care and operation, and that the De Laval Company's interest in you, instead of ending there, just begins.

The De Laval Separator has rendered a service of inestimable value to the dairy industry—the De Laval Milker is doing the same. It removes the one great drawback to dairying—hand milking. American farmers realize the service, stability and integrity back of the name "De Laval," all of which is reflected in the rapidly increasing use of De Laval Milkers.

Write for full information concerning the De Laval Milker

The De Laval Separator Company
NEW YORK, 165 Broadway
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Sooner or later you will use a De Laval Milker or Cream Separator

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THE HOME OF Imp. Edgar of Dalmeny Probably The World's Greatest Breeding Bull

Blue Bell, Supreme Champion at the Smithfield Show 1919, and the Birmingham Show 1920, is a daughter of Edgar of Dalmeny.

The Junior Champion Bull, Junior Champion Female, Champion Calf Herd and First Prize Junior Heifer Calf, Michigan State Fair, 1920, were also the get of Edgar of Dalmeny.

A very choice lot of young bulls—sired by Edgar of Dalmeny are, at this time, offered for sale.

Send for Illustrated Catalogue.

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Woodcote Trojan-Ericas

We are offering ten cows bred to either IMP. ELCHO OF HARVESTOWN, or IMP. EDGAR OF DALMENY

Write for our 1921 BULL SALE LIST

Woodcote Stock Farm, Ionia, Mich.

REGISTERED Aberdeen-Angus. Ten heifers, six bulls from eight to fourteen months. Best of breeding, the growthy kind that make good. Reasonable. Inquire P. J. WILBER, Olio, Mich.

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Cows and Heifers Bred to Blackcap Brandon of Woodcote 2nd For Sale GEO. HATHAWAY & SON, Ovid, Mich.

Reg. Aberdeen Angus bulls and heifers from 6 to 18 mos. old of the very best of breeding, also Berkshire Swine, boars ready for service and pigs both sex singles, pairs or trios, will accept Liberty Bonds. RUSSELL BROTHERS, Merrill, Mich.

Registered Guernseys

A bull calf, nearly ready for light service, at a price, you will pay, don't wait long on this fellow. J. M. WILLIAMS, No. Adams, Mich.

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

Guernsey Bargains Heifer and bull calf unrelated. Both for what the heifer is worth. Also young cow. Liberty Bonds accepted. G. A. WIGENT, Watervliet, Mich.

Guernsey Bulls of May Rose Breeding 420 to 650 lbs. fat also a few cows and heifers are offered. H. W. WIGMAN, Lansing, Mich.

FEDERAL Inspected Guernsey Bulls. Priced to sell. Nine sold in 10 mos. A fine Masher Sequel 3 yrs. old, sure, sound and right \$175.00. Four grandsons of Ex-Champion A. A. cow under 8 mos. old from cows on test. G. W. & H. G. RAY, Albion, Mich.

GUERNSEY BULL CALVES whose sire's dam made 19,480.20 milk, 909.05 fat. Their mother's sire's dam made 15,109.10 milk, 778.90 fat. Can spare 2 to 3 females of above breeding. T. V. HICKS, Battle Creek, Mich.

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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. OLARKE, Vassar, Mich.

Holstein Friesian heifer and bull calves, purebred registered and high-grade. Price \$20 up. Splendid individuals and breeding. Write us your requirements. Brownroft Farms, McGraw, N. Y.

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

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on Nov. 1st will move their Herd of Pure Blood Holsteins to their new home, 1 1/2 miles south of Rochester, Mich. and for the next 30 days we will sell what bull calves we have cheap as we will be unable to get our buildings complete before winter. So get busy if you want a son of Flint Maplecrest Boy at your own price.

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Sons of a 34 lb. Sire

One from a 19 lb. jr. 3 yr. old daughter of a 31 lb. cow for \$150.

One from a 27 lb. jr. 4 yr. old daughter of "Sir Korndyke Veeman Hengerveld" for \$300.

These bulls are sired by "Judge Joh. Lyons" who is a son of one of the highest record daughters of the great "King Segis."

Write for pedigrees.

Sindlinger Brothers

Lake Odessa, Mich.

USE PURE-BRED SIRES!

Estimates furnished by the Dairy Division of the United States Department of Agriculture show that the dairy cows of the country average only 4,500 lbs. of milk per year.

A good Holstein bull will increase the production of the ordinary herd 10 per cent in the first generation.

Let us help you find a good one to use on your herd. You cannot make a better investment.

The Michigan Holstein-Friesian Association

H. W. NORTON, Jr., Field Secretary,
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33.60 lbs. butter average of 8 dams of 8 mo. old bull. Can have him for present cost of service. Liberty Bond or note. M. L. McLAULIN, Redford, Mich.

Holstein or Guernsey calves, practically pure, 7 weeks old, \$25.00 each, crated for shipment anywhere. Satisfaction guaranteed. Bonds Accepted. Edgewood Farms, Whitewater, Wis.

Reg. Holstein Friesian cows will sell one or more. Regis and Pontiac breeding bred right and priced right from two to six yrs. old come and see them or write. HENRY S. ROHLFS, R. 1, Akron, Mich.

For Sale \$475.00

A Young Bull. Cash or Terms. From Junior two year old A. R. O. Heifer, 17.68, born February 10, 1920, sired by MODEL KING SEGIS GLISTA. Whose grand dam, GLISTA ERNESTINE, has six times made better than thirty pounds of butter. This bull is bound to transmit high milk production. GRAND RIVER STOCK FARMS, 315 N. East Ave., Corey J. Spencer, Owner Jackson, Mich. Under State and Federal Supervision

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Buy a "milk" Bull of Quality from the Breeders of the world's only cow to produce 800 lbs. milk in 7 days, having an 800 lb. daughter. Our herd is rich in the blood of Colantha 4th Johanna, the only cow that ever held all world's records in every division from one day to one year at the same time. She produced 637.70 lbs. milk in 7 days. We are offering for sale a bull, whose dam exceeds this record by over 7 1/2 lbs. in 7 days. His dam's records are:

Milk	1 Day	100.1 lbs.
Milk	7 Days	659.3 lbs.
Butter	7 Days	26.31 lbs.

His name is KING VALE CORNUCOPIA WAYNE, No. 312599 Born February 6, 1920. His dam and sire's two nearest dams average Butter 7 Days 33.62 lbs. Milk 7 Days 607.3 lbs. Handsomely marked about one third white. \$250.00 f. o. b. Howell. McPHERSON FARMS CO., Howell, Mich. All herds under U. S. Supervision.

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Offers

Cluny Konigen Colantha Silver 326205
Born May 29, 1920

A white bull with a few black spots. His sire a 30 lb. son of King Segis Pontiac Konigen. Sire's 7 nearest dams average 32.301 lbs. butter 624.1 lbs. milk in 7 days. His dam has a Jr. 3 year old record of 17.683 lbs. butter from 418.7 lb. milk and is a granddaughter of Colantha Johanna Lad. 2nd dam—a 21 lb. cow that our barn records show milked over 145,000 lbs. in 14 milking periods producing 15 calves. Pedigree on application. Price \$250.00. Federal Accredited Herd.

R. Bruce McPherson, Howell, Mich.

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CRYSTAL SPRING STOCK FARM,
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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.

JERSEY BULLS Ready for Service. Raleigh—Oxford and—Majesty breeding. Meadowland Farm, Waterman & Waterman, Packard Rd., Ann Arbor, Mich.

Lillie Farmstead Jerseys Bull calves from R. of M. cows. COLON C. LILLIE, Coopersville, Mich.

Jersey Bulls from R. of M. dams \$75 to \$150 each. NOTTEN FARM, Grass Lake, Mich.

Jersey bulls for sale: From Marguerite's Premier a grandson of Poggi 99th and R. of M. dams. SMITH & PARKER, R. 4, Howell, Mich.

Meridale Interested Owl No. 11311 heads my herd bull calves from this great sire and out of R. of M. dams for sale. Leon E. Laws, R. 6, Allegan, Mich.

Registered Shorthorns. Bulls and heifers. prices within reach of all. G. R. DeSHETLER, R. 4, Tecumseh, Mich.

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BUY A BULL

that will put weight on your dairy calves—the difference will soon pay for the bull. Now selling good Scotch and Scotch-topped yearlings, reasonably priced. We guarantee every animal to be a breeder. Federal Test. One hour from Toledo, Ohio, N. Y. C. R. R.

BIDWELL STOCK FARM,
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JERSEY BULLS

Sired by Majesty's Intense 127191 who is a double grandson of the famous Royal Majesty and who is out of the cow Majesty's Iris 265701 the second highest cow to be tested in the state of Michigan.

All of these bull are out of Register of Merit dams.

Brookwater herd is on the Federal Accredited List as TUBERCULIN FREE. There never has been a suspicious case of tuberculosis on the farm.

PRICES are the lowest that they have been for this class of stock and lower than they will be again in the next few years.

Description and pedigrees furnished upon request.

Brookwater Farm, Ann Arbor, Michigan
H. W. Mumford, Owner, J. B. Andrews, Manager



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Cornelius Van Buren, Santa Ana, Cal. writes:

"I had supervised official dairy tests for two years in Wisconsin and California and therefore had a very good opportunity to study relative merits of all dairy breeds. The Holstein is most in demand and Holstein stock of both sexes sell more readily and for higher prices than other breeds. Everybody is interested in Holsteins."

The Holstein-Friesian Association of America
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Choice individuals; shipped to you c. o. d. express paid and guaranteed right or your money refunded. All stock registered in buyer's name.

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all ages sired by Callaway Edd 1918 world's grand champ. boar and C. C. Schoolmaster 1919 world's grand champion also Wonder Big Type and Giant Buster. Write your wants, all stock shipped on approval.

CRANDELL'S PRIZE HOGS, Cass City, Mich.

Bloomdale Shorthorns

See our cattle get our prices and breeding before buying. Both bulls and females for sale. CARR BROS. & CO., Bad Axe, Mich.

Milking Shorthorns, bulls and heifers 5 mo. to 1 year old for sale at reduced prices to make room for younger stock. E. H. KURTZ, Mason, Mich.

Stop! Look! Listen!

Have you a catalog of the Shorthorn Sale to be held at M. A. C. Feb. 25th at 1 P. M. We are listing four valuable females and two show bulls.

Richland Farms,

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The Maple's Shorthorns

Kirklevington Lad, by Imp. Hartford Welfare, in service. Stock for sale.

J. V. WISE, Gobleville, 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.

Branch County Farm

Breeders of

Polled Shorthorn Cattle

Young Bulls For Sale

Several well bred herd bull prospects. GEO. E. BURDICK, Mgr., Coldwater, Mich.

VALLEY VIEW FARMS

Choice young Shorthorn cows and heifers for sale at all times, bred or open, or a carload, also a few young bulls strong in Sultan Blood. Write S. H. PANGBORN & SON, Bad Axe, Mich.

Shorthorns Scotch and Scotch topped. Herd bull prospects 1 roan 16 mo. old; 1 red 8 mo. Also four yr. old roan cow. All stock registered and guaranteed right. J. A. WILK & SON, Alma, Mich.

Central Michigan Shorthorn Breeders Association offer for sale 75 head; Both milk and beef breeding, all ages. New list ready Jan. 15. M. E. MILLER, Sec., Greenville, Mich.

Registered Shorthorn bulls ready for service for sale or trade. Apply THE JENNINGS FARMS, Bailey, Mich.

Shorthorns Imp. Royal Pioneer in service bred by J. Dunn first five sires bred by W. Duthie. J. A. BARNUM, Union City, Mich.

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

Reg. Red Polled bull calves, from 3 mos. to 1 year old, sired by Famous Charmer. 75% same blood as Charmer 1919 International Grand Champion. Our herd State and Federal tested. Westbrook Bros., Ionia, Mich.

Wayside Farm Brown Swiss Cattle are good ones. Bull calves for sale. correspondence solicited. ERVIN MOORE, Osseo, Mich.

HOGS

DUROC JERSEYS

Carey U. Edmonds, Hastings, Mich.

DUROC JERSEYS

Bred gilts, service boars and fall boar pigs at Bargain prices. Your correspondence or personal inspection is cordially invited. RUSH BROS., Oakwood Farm, Romeo, Mich.



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

Duroc Boars at bargain prices large growthy hogs 15 months old at \$60. Will send C. O. D. and register in the buyers name. Orders booked for Apr. pigs to deliver June 1st. W. E. Bartley, Alma, Mich.

Write Me at once I have just what you want heavy bone registered Duroc Jersey boars ready for service. W. H. MAYES, L. B. 505, Durand, Mich.

Brookwater Duroc Jerseys

BOARS—Ready for Service
Bred Sows and Gilts

Write us for Prices and Pedigrees. Mail orders a Specialty. Satisfaction guaranteed. BROOKWATER FARM, Ann Arbor, Mich. H. W. Mumford, Owner J. B. Andrews, Mgr.

DUROC SOWS and gilts bred to Orion King No. 16929 Son of the \$10,000 boar owned by Longview Farm, Le Summit, Mo. also young boars ready for service out of good sows. Apply THE JENNINGS FARM, Bailey, Mich.

Duroc Jersey Sows and Gilts bred for March, April, May farrow. Also a few spring boars. Best of blood lines and splendid individuals. Satisfaction guaranteed. Write for pedigree and prices, or better come and see, visitors welcome. Thos. Underhill & Son, Salem, Mich.

Buy Pigs Now. Reg. Duroc pigs crated and delivered to express station for \$20 each. Choice stock sired by State Fair winners and weighing near 100 lbs. each. Write for particulars. Michigan Farm, Pavilion, Mich.

DUROC Jerseys. Boars for spring service, heavy boned type, from the most popular blood lines at reasonable prices. Partridge Rock eggs from best laying strain \$2 per lb. Drott & Berns, Monroe, Mich.

DUROC JERSEYS few gilts bred for April farrow. Good ones. E. D. HEYDENBERG, Wayland, Mich.

DUROCS Bred sows all sold. A few choice fall boars for sale. W. C. TAYLOR, Milan, Mich.

O. I. C. Swine Strictly Big Type with quality. A few gilts bred for last of April, and May farrow. A few Sept. and Oct. fall pigs either sex. Extra good ones. Of our State Fair prize winning blood lines. Will ship C. O. D. and record them free. NEWMAN'S STOCK FARM, R. 1, Mariette, Mich.

O. I. C.'s Fall pigs by O. C. Big Callaway have size and quality and are priced right. C. J. THOMPSON, Rockford, Mich.

O. I. C. Bred Gilts for Mar. and Apr. farrow also a few choice service boars. CLOVER LEAF STOCK FARM, Monroe, Mich.

O. I. C. Gilts bred for April and May farrow. Shipped C. O. D. H. W. MANN, Dansville, Mich.

Veterinary.

CONDUCTED BY DR. W. C. FAIR.

Advice through this column is given free to our subscribers. Letters should state fully the history and symptoms of each case and give name and address of the writer. Initials only are published. When a reply by mail is requested the service becomes private practice and \$1 must be enclosed.

Unthrifty Sow.—Have sow that has had only one litter of pigs. She is all run down and out of condition. D. D. C., Holt, Mich.—Mix equal parts of ginger, gentian, bicarbonate of soda and powdered licorice together and give her a teaspoonful or two at a dose in feed two or three times a day.

Nodular Disease.—Have recently lost three sheep, and several more are sick. Their sickness shows up suddenly, the animal appearing as if intoxicated for two days, then die. Am feeding ensilage once a day, also corn fodder and mixed hay twice daily. I opened one and found kernels on the small intestines about the size of a bean and filled with a greenish substance. The paunch was filled with food but nothing in the small intestines. What ails these sheep? The sheep are two and three years old. H. N., Fowlerville, Mich.—Doubtless your sheep suffer from Esophagostoma Columbianum, "nodular disease," and the symptoms are so obscure that the presence of the parasite is not discovered until the sheep is dead. Treatment is hopeless.

Fleas on Dog.—What will kill fleas on dogs? F. Z., Marine City, Mich.—Apply one part coal-tar disinfectant and thirty parts water.

Catarrh.—We have a cat troubled with cold in the head, caused perhaps from exposure. It is inclined to sneeze. Mrs. W. H., Adrian, Mich.—Dissolve a teaspoonful of salt in one pint of clean tepid water; then dip nose and lower part of face into this saline solution three times a day. Keep him in warm place, feed him whatever he craves.

Indigestion.—Worms.—My nine-year-old mare is thin, and occasionally passes a few worms. What shall I give her? R. S., Whittemore, Mich.—Increase her feed and mix equal parts of powdered sulphate of iron, gentian, ginger, fenugreek and salt, together. Give a tablespoonful in each feed, for not less than thirty days.

Lumps in the Teats.—One of my cows freshened a few weeks ago, and since then bunches have grown in both front teats, which make milking somewhat tedious and difficult. J. L., Fremont, Mich.—Step into any drug store and purchase two ounces of iodine ointment and apply it to teats directly over bunches twice a day. Don't use a milking tube unless you are willing to boil it for fifteen minutes each time, before using it, for if you don't the udder is likely to become infected and ruined.

Effect of Feeding Corn to Cow.—Last fall I butchered a six-year-old cow that I had fattened exclusively on corn and when boiling some of the meat the water has a reddish color. What is the cause of the water changing color? W. D., Lansing, Mich.—Doubtless feeding her mostly on corn had most to do with changing the color of the water after the meat had been cooked. Don't cover kettle and change water a time or two. The meat can be safely used for food.

Warts on Teats.—I have a three-year-old heifer that has several warts on her teats. Have applied castor oil, but it fails to remove them. R. G., Clarion, Mich.—Every wart that has a neck should be clipped off, or cut off. Apply lunar caustic to wound to prevent them growing again. Rub on pure olive oil to flat warts twice a day.

Depraved Appetite.—I have nine head of cattle which have been eating and gnawing boards and all kinds of wood, since last fall. I also noticed it some last summer when on clover and June grass pasture. Cows are now in poor condition and do not give much milk. Am feeding corn and soy bean silage twice a day, with ground corn and oats, bright corn fodder and June clover twice a day. F. V. H., Charlotte, Mich.—This disease is confined to certain regions, due to soil and certain local vegetation, therefore a change of food is doubtless the best remedy. Mix one pound of carbonate of iron, four pounds of bone flour, powdered gentian one pound, powdered fenugreek one pound, salt two pounds, and give each cow a tablespoonful in each feed. Doubtless you have plenty of wood, if so feed them plenty of powdered wood charcoal and mix it in every feed.

SAVING FARMERS from BANKRUPTCY

That's the mission of silos. Years ago, when the mortgage-lifters, then came over, today with ruin facing thousands of farmers, the silo steps to the front, and profitable farming of the future depends more on the silo, more on the calf raising, baby beef feeding, marketing more, if not all of your crops through the silo.

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Farmers everywhere are waking up. The demand for silos is the biggest ever. If you are interested, get busy. Write us today. Get our special proposition that means a big saving, silos now saving easy. A plan that's new, different and original. No cash to pay. No interest. No deposit. Silo pays for itself.

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Different from all others—the cheapest, most satisfactory permanent silo on the market. Made of the best silo material known. Can't rot, will not crumble, not affected by weather. Special construction features not found on any other—such as new foundation construction, special interlocking anchoring system fastened into silo foundation, heavy steel door frame and many other improvements that put Champion Silos ahead of all. Tones absolutely permanent, absolutely practical in silo.

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Upon request we will send you a free, without any obligation, Champion Silo Catalog. Blue Prints of construction and feeding reports telling how prominent feeders make money, also particulars of terms, etc.

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A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$24.95. Closely skims warm or cold milk. Makes heavy or light cream. Different from picture, which illustrates larger capacity machines. See our easy plan of

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Bowl a sanitary marvel, easily cleaned. Whether dairy is large or small, write for free catalog and monthly payment plan.

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AMERICAN SEPARATOR CO.
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Spartansburg, Pa., Dec. 8, 1920

Le Roy Plow Co., Le Roy, N. Y.

Gentlemen:
"The LE ROY does not go hobbling out of the ground at every stone like other plows, but stays in the ground doing business first, last and all the time."
Yours truly, C. W. MAIN.

REVIEW OF FEED MARKETS.

(Continued from page 378).
rally smaller than a year ago. The last government statistics available, for January 31, show a total of 233,979 tons on hand, compared with 265,670 tons a year ago. This is further strained by the fact that crushers are not now operating so intensively as a year ago, a majority of plants, in fact, having closed down for lack of seed. Mill activity the remainder of the crop year will be on a very restricted scale.

For a brief period linseed cake and meal followed the downward course of cottonseed feed, but the flaxseed products have since rallied, now selling as much as a dollar a ton higher than in the early part of February. On the Minneapolis market crushers and jobbers are asking about \$39 to \$40 a ton for linseed cake and meal, while export operators are quoting the market for cake at the seaboard around \$45 a ton. Extensive buying of linseed cake by Holland, the Scandinavian countries and other European nations has been the outstanding strengthening influence in the domestic market, mills having been enabled to dispose of much of their surplus stocks. Feeders also have taken hold more freely, due in a measure to the improved position of hogs, but the domestic demand still lacks much from being normal. Observers of the foreign demand situation are inclined to doubt the maintenance of that trade, owing to the approach of the pasture season in those countries. Without a foreign demand, difficulty will doubtless be experienced in holding up prices around current levels.

The Hay Market.

The position of the market for alfalfa, prairie and tame hay offers little of a bullish character. The occasional display of strength is due almost entirely to a technical rather than fundamentally sound influence, the reluctance of farmers to dispose of their surplus at current prices. Yet the fact remains that stocks of alfalfa and other varieties of hay are in the aggregate the largest on record for this period of the year. For several weeks the alfalfa market would undergo a sharp break because of the pressure of offerings from the country, then suddenly rally in price because of the let-up in marketings, with each succeeding rally causing another rush of hay to terminals. The declines are more severe than the upturns, with the result that hay is now selling at a considerably lower price. Alfalfa can be bought around \$21 a ton for the very best grades, around \$16 to \$18 a ton for good shipping grades and down to \$8 a ton for the cheap brown offerings on the Kansas City market. Tame hay is selling at an extreme range of \$9 to \$21 a ton in Kansas City, up to \$27 a ton in St. Louis, with a range of \$18 to \$27 a ton in Chicago for timothy and clover mixed. Some prairie hay has been worked to Michigan points, but the quantity is negligible, timothy being available in this territory at much lower prices than the delivered cost of Kansas fancy wild hay.

Dairymen and other feeders should not become enthusiastic over the recent declines in hay and accumulate large stocks. Hay should be bought only as needed. However, there is some fear of a possible dry spell and many producers are "sitting tight" on their surplus alfalfa, though there is too much of the legume in the country to make such action an influence of importance on markets. Further material declines in prices, of course, will be slow, for the market already is at such a low level as to make shipments from important producing sections far from terminals impossible. Idaho and other irrigated producing states of the northwest have practically halted their shipments of alfalfa, being unable to absorb a ten-dollar rate to the Kansas City market.

Puts Horses In Prime Condition

Most horses will work if they feel right. When you have to force them, something is wrong. No horse feels right when worked hard on warm spring days unless his heavy winter coat is clipped.

Spring clipping is the best protection against colds, stiffness and more serious horse ailments. It pays big, and progressive farmers do it with a Stewart No. 1 Ball Bearing Clipping Machine. Price \$14 at your dealer's, or we ship direct on receipt of \$2 and you pay balance on arrival. Guaranteed to please or money back.

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The wool is an important part of your sheep profits. Get it all.

Hand blade shearing leaves 15% of the wool crop on the sheep, besides an uneven fleece that won't bring best prices.

This Stewart No. 9 Ball Bearing Machine shears quick and clean, leaves no ridges. Quickly pays for itself, even on a few sheep.

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If your flock is large, write for Catalog No. 69 of power shearing machines.

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HOGS

O.I.C's Choice gilts for April and May farrow, also fall pigs. Booking orders for spring pigs. A. J. BARKER & SON, Belmont, Mich.

We Are Offering at special low prices O. I. C. fall pigs sired by State Fair winners. WEBER BROS., Phone 408, Royal Oak, Mich.

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. Big Type Gilts, bred for Mar. and April farrow. Boars all ages. Write me for prices. G. P. ANDREWS, Mason, Mich.

O. I. C's. 8 last spring gilts due to farrow in Mar. and Apr. some tried sows service boars and last fall pigs, not akin, big growthy stock. Registered free. Citz. Phone 124, Otto B. Schulze, Nashville, Mich.

Raise Chester Whites

Like This the original big producers

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—No Money from Hogs. G. B. BENJAMIN, R. F. D. 10, Portland, Michigan

Saginaw Valley Herd. Prize winning O. I. C's. Jan. and Feb. pigs, priced reasonable. J. Gibson, Fosters, Mich.

Big Type Polands Some very choice fall boars, ready for spring service for sale. They are sired by The Clansman; dam, the \$1025 Miss Columbian, a littermate to the \$40,000 The Yankee. Also a few choice boars by The Clansman, son of The Clansman. WESLEY HILE, Ionia, Mich.

Big Type Polands. Bred sows all sold, but have some good herd boar prospects, fall boars weighing 175 lbs. Sired by the Arctic. Call or write. IORUS HOVER, Akron, Mich.

P. C. Bred sows. Fall pigs singly or in pairs. Also S. C. O. Minorca cockerels, all big type of the best of breeding. Satisfaction guar. R. W. Mills, Saline, Mich.

L. S. P. C. a few choice boars bred to Black Giant one of the best pigs out of Ill. this fall. Also a grandson of The Clansman and Harrison Big Bob. H. O. SWARTZ, Schoolcraft, Mich.

L. T. P. C.

70 head of Poland Chinas at private sale. Am offering spring boars from \$40 to \$50 and gilts the same price. Summer and fall pigs \$25 each. The first check will bring you the first choice. HART, FULCHER & OLIVE, Address F. T. Hart, St. Louis, Mich.

Francisco Farm Poland Chinas

Offering a dozen choice gilts and a few tried sows bred to such boars as Michigan Mastodon and Michigan Clansman. P. P. POPE, Mt. Pleasant, Mich.

Big Type P. C. some very choice boars double immune, out 1100 lb. sire and mammoth sows from Iowa's greatest herds. E. J. Mathewson, Burr Oak, Mich.

Big Type Poland Chinas at lowest prices. Both sows and gilts. G. A. BAUMGARDNER, R. 2, Middleville, Mich.



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At greatly Reduced Prices. English and American White Leghorns and Anconas farm raised—Free Range—Highest Quality—Lowest Prices.

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Superior Poultry Farms & Hatchery, Box 203, Zeeland, Mich.

Large Type Poland Chinas. Nothing for sale at present. A. A. FELDKAMP, R. 2, Manchester, Mich.

L. T. P. C. If you are looking for something good, in bred gilts at a right price. Write W. J. HAGELSHAW, Augusta, Mich.

POLAND China Bred Sows and Gilts at bargain prices, also spring boars and fall pigs, either sex. CLYDE FISHER, R. 3, St. Louis, Michigan

Leonard's Big Type P. C. Sows bred to Orange Clansman. Fall boar pigs weigh 175 lbs. Real herd boar prospects. Call or write. E. R. Leonard, R. 3, St. Louis, Mich.

PINE GROVE HAMPSHIRE

We are offering a few tried sows bred for March and April farrow. These sows are all closely related to our winning show herd and of popular blood lines, and the price! Way Down! Geo. Coupar & Sons, Marlette, Mich.

Hampshires Bred gilts all sold. Spring and fall boar pigs at a bargain. JOHN W. SNYDER, R. 4, St. Johns, Mich.

Bred Sows and Gilts \$50 and up, for April, May and June farrow. Have a few good fall pigs at reasonable prices for sale. M. G. MOSHER & SONS, Osseo, Mich.

SHEEP.

SHEEP WANTED

Will trade big black registered Percheron Stallion 12 years; sure, sound, gentle, good worker and show horse. George Pardee, Galien, Mich.

Wool-Mutton Shropshire Rams. Good strong bred, priced right. A. H. FOSTER, Allegan, Mich.

Shropshires Choice ewes, all ages, bred to imported ram. Also a few rams. W. B. McQUILLAN, R. 7, Howell, Mich.

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.

POULTRY

March Chicks Buy 'em Home

	100	50	25
S. C. White Leghorns	\$18.00	\$9.50	\$5.00
Bd. Rocks, R. I. Reds	\$20.00	10.50	5.50

Write for other varieties. With order please send date wanted and name second choice. Prepaid and guaranteed live delivery.

Washtenaw Hatchery, Ann Arbor, Mich

BABY CHICKS of Superior Quality

Hot from the Hatchery, right to your door safely, by prepaid parcel post. BIG Strong, fluffy fellows hatched from eggs of selected flocks, and under our own supervision. ROCKS, LEGHORNS, ANCONAS, REDS and MINORCAS, Chicks that live and grow into money. Bred for EGG PRODUCTION and the SHOW ROOM. Save money by sending for our catalogue NOW. THE SUPERIOR CHICK HATCHERY, Lock Box 197, Prairie Depot, Ohio.

Barred Rock Eggs for hatching, selected quality, \$2.00 for 15. \$6.00 for 50; \$12.00 for 100. Prepaid Parcel Post, or L.S. MR. H. HUNT, R. 1, Dearborn, Mich.

Barred Rock Chicks 100% safe delivery. Reduced Prices. Write for circular. H. H. PIERCE, Jerome, Mich.

Officially Certified Pedigreed

S. C. Buff Leghorns chix and eggs from 213 to 231 record stock. Money makers priced right. HENRY DePREE, R. 8, Box 137, Holland, Mich.

S. C. Brown Leghorns Barron S. C. White-Leghorns \$22-275 strain. Eggs 15-22; 30, \$3.75; 50-\$5; 100-\$9 prepaid. Miss V. Fulton, Gallipolis, O.

S. C. Black Minorca cockerels exhibition and utility. Single settings or quantity. C. J. Deedrick, Vassar, Mich.

S. C. W. Leghorn Eggs Barron Strain stock from for 30. V. O. YORK, Box 403, East Lansing, Mich

Van's White Rocks Best in state of Missouri. Cockerels and eggs for sale from high record females. L. R. VAN AKEN, West Plains, Mo.

White Wyandottes: Pullets \$5.00 each. Pens \$25.00. Cockerels from hens with 207 egg average \$5.00 and \$8.00 each. Eggs \$2.00 per 15. FRANK DeLONG, R. 3, Three Rivers, Mich.

Whittaker's R. I. Red Chicks and Eggs. Both Combs. Michigan's Color and Egg strain. Prepaid and safe delivery guaranteed. Send for free catalog. INTERLAKES FARM, Box 39, Lawrence, Mich.

White Wyandottes Winners Chicago Coliseum—Some strong, sturdy, good breeding Cockerels at \$5.00, \$7.50 and \$10.00. H. J. RILEY, Box M, Hillsdale, Mich.

White Wyandotte Cockerels from bred-to-lay stock, \$5.00 each. HOWARD GRANT, Marshall, Mich.

White Wyandottes Official records, five hens 1074 eggs. Eggs 15, \$3.00 and 10.00; 100, \$15.00. Catalog free. G. W. SCHOTTMANN, Montrose, Ill.

W.F.B. Spanish Hatching eggs. Heavy S.C.M. Anconas. Layers. Prize winners. \$3 per 15 eggs. Lawrence Labaie, Cheboygan, Mich.

60 BREEDS chickens, ducks, geese, turkeys, guinea fow, hares, dogs. Fine illus. and desc. catalog only 10c. Edwin A. Souder, Sellersville, Pa.

100 March hatched. Barron strain, S.C. White Leghorn cockerels. Large, vigorous, pure white birds \$3 and \$5 each. R. E. McInerney, R. 1, Frankenmuth, Mich.

White Holland Turkeys White African Guineas 30 H. Burgess, Prof., Poultry, Mich. Agri. College. Farm for sale. Alden Whitcomb, Byron Center, Mich.

Mammoth Bronze Turkeys, Toulouse Geese and Pekin ducks. Either sex and eggs! CHASE STOCK FARM, Marlette, Mich.

LATEST MARKET REPORTS

GRAIN QUOTATIONS

Tuesday, March 15.

Wheat.

Detroit.—Cash No. 2 red \$1.70; May \$1.63; No. 2 white and No. 2 mixed \$1.68.

Chicago.—No. 2 red \$1.65½; No. 2 hard \$1.56¼ @ 1.59½; March \$1.55½.

Corn.

Detroit.—Cash No. 3 yellow 70c; No. 4 yellow 67c.

Chicago.—No. 2 yellow 66¼ @ 67c; No. 2 mixed 65c.

Oats.

Detroit.—Cash No. 2 white 46½c; No. 3 white 45c; No. 4 white 42c.

Chicago.—No. 2 white 42 @ 43c; No. 3 white 40½ @ 43c.

Beans.

Detroit.—Immediate and prompt are lower at \$3.75 per cwt.

Chicago.—White beans steady. Hand-picked beans choice to fancy \$4.50 @ 4.75; red kidney beans \$9 @ 9.25 per cwt.

New York.—Market is dull. Choice pea \$4.75; do medium at \$5.50 @ 5.60; red kidney \$9.

Rye.

Detroit.—Cash No. 2 rye \$1.53.

Seeds.

Detroit.—Prime red clover \$13.25; alsike \$15; timothy \$3.10 per bushel.

Toledo.—Prime red clover, cash at \$13.05; March \$12.80; alsike \$15; timothy \$2.95 per bushel.

Hay.

No. 1 timothy \$22 @ 23; standard and light mixed \$21 @ 22; No. 2 timothy \$20 @ 21; No. 1 clover mixed \$18 @ 19; No. 1 clover \$17 @ 18; rye straw \$13 @ 14; wheat and oat straw \$12 @ 13 per ton in carlots at Detroit.

WHEAT

The government report removes a great deal of the strength of the domestic wheat situation, as it was commonly believed that the United States could not export additional quantities without drawing upon our normal carry-over of about 70,000,000 bushels. The total supply now shown amounts to about 318,000,000, compared with 338,000,000 bushels last year. This allows thirty to forty million bushels yet for export, in addition to a carry-over of 70,000,000 bushels. The total North American surplus for export is estimated at about 85,000,000 bushels. The world's supply and demand situation in the wheat market can still be regarded as rather strong, especially since the low estimate on available surpluses from Argentine and Australia have been confirmed and the first official reports from India suggest a crop below actual domestic requirements. A crop scare in this country or decided revival in general business may induce a material upturn in wheat prices but if such factors fail to develop the market will not get as far above present levels as seemed possible a short time ago.

CORN

Reserves of corn on farms on March 1 were 1,572,600,000 as compared with 1,071,000,000 bushels last year. This total is about 60 per cent above the average of the preceding five years and about 100,000,000 bushels above the average of private estimates previously issued. The disappearance of corn since November 1 amounted to 1,000,000,802 bushels, compared with 1,897,000,000 bushels last year, and a ten-year average of 1,854,000,000 bushels. Mild weather and an open fall seem to have offset the low price.

OATS

Reserves of oats were 689,000,000 bushels, or 271,000,000 bushels above last year. The five-year average is 520,000,000 bushels. The March 1 figures indicate the disappearance of 893,000,000 bushels from the farms during the first eight months of the crop season, which is the smallest since 1914.

BEANS

Bean markets continue weak with buying power restricted to a hand-to-mouth character. Prices for choice hand-picked stock f. o. b. Michigan points are quoted around \$3.90 per 100 pounds, which means about \$3.25 to growers for beans in the dirt.

FEEDS

Slight advances in bran and other mill feeds took place at leading trading centers during the past week. Linseed oil meal also advanced about \$1 per ton at Minneapolis. Supplies ap-

pear adequate and there seems no likelihood of a big rise in values as grass will be available before many weeks have passed.

HAY

Most hay markets have been relatively firm during the past week. Receipts are unusually light and there has been a slight increase in demand, particularly from sections near the principal distributing centers. Reports to the bureau of crop estimates show a great abundance of hay still on hand in Colorado, Idaho, Missouri, North Dakota and South Dakota. Grass will soon be available and with a moderate increase of acreage of clover and timothy in prospect the outlook for marketing the surplus of hay from the 1920 crop is not especially promising.

POTATOES

Potato markets have been somewhat irregular but the general trend of values is upward. Shipments are heavy but many of them consist of good stock going south and southwest. Supplies of table stock are normal. Michigan stock U. S. Grade No. 1 brings \$2 per 150-lb sack in Detroit, and \$1.20 @ 1.25 per cwt. in Chicago.

APPLES

Apple markets displayed additional strength during the past week and prices advanced. Receipts are moving into consumptive channels more freely

and the export movement, especially to Great Britain, has been heavy.

BUTTER

Butter prices declined from day to day throughout the past week. Danish competition, which was on the horizon a week ago, exerted more influence. Although no Danish butter was unloaded until the end of the week, four cargoes are expected within the next two weeks. Warm weather also reduced the sale of storage butter and California butter is being offered in the middlewest at low prices as the season is now close to the flush period in that state. Heavy production in the middlewest is also in sight. There is no speculative buying as the market is expected to decline still further before the storage season arrives. A price as low as 35c for butter for storage in May has been predicted by some members of the trade. Prices for 92-score fresh butter on March 12 were as follows: Chicago 45¼c; New York 47½c; Philadelphia 48¼c; Boston 47c.

EGGS AND POULTRY

Spring-like weather during the past week caused further declines in egg markets. Receipts at four markets increased about 20 per cent and are now running nearly double those of last year. A small percentage is moving into cold storage as bankers will not finance such holdings liberally. The

receipts of poultry have been liberal and declines in prices occurred on some markets.

HONEY

There is little activity in the honey market and supplies are light. At Boston sales to retailers of 24-section cases, White Clover No. 1 heavy are reported at \$8.50 @ 9; light \$7 @ 8. At Cleveland extracted honey is quoted at 16 @ 19c per pound for White Sweet Clover. There is practically no trade in bulk honey. At Chicago the market is very weak and White Alfalfa and Clover honey in bottles is quoted at 13 @ 13½c a pound, and White Clover and Alfalfa in 24-section cases at \$6 @ 6.50 for No. 1 heavy quality. Beeswax is quoted at from 32 @ 33c for light and 29 @ 31c per pound for dark.

DETROIT CITY MARKET

There is an active demand in the city for apples, cabbage and potatoes. The supply of produce is light and the buyers are not numerous. Fancy apples in wholesale lots bring \$2.25 @ 2.50, while other grades range down to 75c for inferior stock. The best white cabbage brings 75c @ \$1; dry onions 75c @ \$1; parsnips 50 @ 85c; potatoes 85c @ \$1; carrots 50 @ 85c per bu; eggs 45 @ 50c per dozen.

Sales to jobbers at tracks show potatoes selling at \$2.10 @ 2.15 per 150-lb. sack; Michigan Greening apples A-2½-inch grade at \$4.85 @ 5; Baldwins \$5.50 @ 5.75; onions 75c @ \$1.

Hay prices are draggy and a little lower than last week. The highest price paid was \$21 with a few loads at \$18.

HORSE MARKET

Demand for horse flesh continues to center on farm chunks suitable for the eastern trade. Receipts during the past week were more readily absorbed than during the preceding week and a slight recovery in values was apparent. Chicago prices as follows: Good and choice heavy drafters, 1700-1800 pounds \$200 @ 265; common and medium drafters \$125 @ 175; farm mares \$100 @ 140; farm chunks 1200-1400 pounds \$125 @ 175; wagon horses \$125 @ 175.

FARM BUREAU MARKET REPORT.

New high levels were reached in medium clover during the past week caused by a heavy demand and light sales on growers' part, \$13.25 the highest point. Timothy scored a 20 cent advance, closing at \$2.95. Alsike is unchanged. Future markets indicate a sharp break when the rush is over. Seeding is under way in the southern counties, while all sections of the state are ready to sow.

NEWS OF THE WEEK.

(Continued from page 368).
izations.—The American consul at Fiume is refused recognition by that government.

Monday, March 14.

THE League of Nations accepts the mediation by the United States in the frontier dispute between Panama and Costa Rica, and hostilities have ceased.—Navy estimates for Great Britain show large reductions but still total an expenditure of \$4,372,300 pounds.—The Japanese cabinet is now facing difficulties and may quit.

Tuesday, March 15.

THREAT of an economic blockade against Germany is made in the British house of commons.—An earthquake shock is reported from central Illinois.—United States commissioner general of immigration is completing plans to divert immigrants from industrial centers and place them on small farms.—Germany is making formal protest to the league of nations against the allied penalties imposed because of her refusal to accept indemnity demands.—April 11 is selected as the date for opening the special session of the sixty-seventh congress.—Recognition of the Greek government of King Constantine by the United States is expected to follow negotiations now under way.

COMING LIVE STOCK SALES.

Holsteins.—March 21, Beeson & Holden, Three Oaks, Mich.
Holsteins.—March 22, Joseph L. Ziegler, South Lyon, Mich.

Live Stock Market Service

Wednesday, March 16.

BUFFALO

Hogs declined 50c @ \$1 from Tuesday's prices, heavy hogs now bringing \$10.25 @ 10.50; mixed hogs \$10.75 @ 11; lights \$11.50 @ 11.60; best lambs were sold for \$11.50; calves are higher at \$15.50.

DETROIT

Cattle.

Market steady.

Best heavy steers	9.00 @ 9.50
Best handy wt bu steers	8.00 @ 8.25
Mixed steers and heifers	7.50 @ 8.25
Handy light butchers	6.50 @ 7.50
Light butchers	5.50 @ 6.50
Best cows	6.50 @ 7.50
Butcher cows	5.00 @ 6.00
Common cows	3.00 @ 4.00
Canners	2.50 @ 3.50
Choice bulls	6.00 @ 7.00
Bologna bulls	5.00 @ 6.00
Stock bulls	5.00 @ 5.50
Feeders	7.00 @ 8.00
Stockers	6.00 @ 7.50
Milkers and springers	40 @ 90

Veal Calves.

Market steady.

Best	14.00 @ 14.50
Others	6.00 @ 10.00

Hogs.

Hogs 50c @ \$1 lower.

Mixed hogs	10.25 @ 10.50
Pigs and yorkers	10.75

Sheep and Lambs.

Market dull.

Best lambs	10.25
Fair lambs	8.00 @ 9.00
Light to common	5.00 @ 7.50
Fair to good sheep	5.00 @ 5.50
Culls and common	1.50 @ 3.00

CHICAGO

Hogs.

Estimated receipts today are 23,000; holdover 16,972. Market 35 @ 50c low.

er; heavies slow. Bulk of sales \$9.10 @ 10.35; tops \$10.65; heavy 250 lbs up medium, good and choice \$9 @ 9.50; medium 200 to 250 lbs medium, good and choice \$9.35 @ 10.35; light 150 to 200 lbs common, medium, good and choice at \$10.10 @ 10.65; light lights 130 to 150 lbs common, medium, good and choice \$10.15 @ 10.65; heavy packing sows 250 lbs up smooth \$8 @ 8.85; packing sows 200 lbs up rough \$7.75 @ 8; pigs 130 lbs down, medium, good and choice at \$9.50 @ 10.65.

Cattle.

Estimated receipts today are 9,000. Market slow and steady to lower. Beef steers medium and heavyweight 1100 lbs up choice and prime \$10 @ 10.75; do medium and good at \$8.50 @ 10; do common \$8 @ 8.50; light weight 1100 lbs down good and choice \$9.50 @ 10.50; do common and medium \$7.50 @ 9.50; butcher cattle, heifers common, medium, good and choice \$5.50 @ 9.50; cows common, medium, good and choice at \$5 @ 7.85; bulls bologna and beef \$4.75 @ 7; canners and cutters, cows and heifers \$2.75 @ 5; do canner steers at \$3.50 @ 5; veal calves light and handy-weight medium, good and choice \$9.75 @ 12.25; feeder steers common, medium, good and choice at \$7.75 @ 9.75; stocker steers common, medium, good and choice \$6.50 @ 8.50; stocker cows and heifers common, medium, good and choice \$4.50 @ 6.50.

Sheep and Lambs.

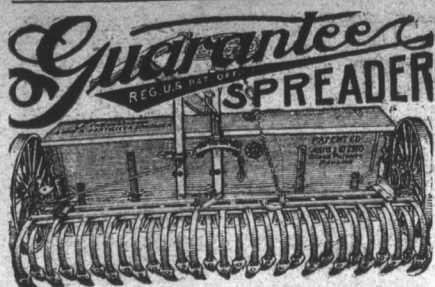
Estimated receipts today are 19,000. Heavy lambs dull, others are steady. Lambs 84 lbs down medium, good, choice and prime \$8.75 @ 10.50; do 85 lbs up medium, good, choice and prime \$8 @ 10.25; do culls and common \$7 @ 8.50; spring lambs medium, good, choice and prime \$7.50 @ 8.75; ewes, medium, good and choice \$5 @ 6.35; do cull and common \$2 @ 4.50; yearling wethers medium, good and choice at \$7.25 @ 9.45.

Little Journeys to the Market

III.—Prime Steer.

PRIME steers such as are quoted at the top of the classes and grades in this market report are the most select grade of steers produced. Such steers have the blocky, rotund build, typical of beef cattle which win prizes in the show ring. They are not coarse in bone, but show the clean-cut head and joints which stockmen refer to as quality or refinement in animals. They have been carried on a heavy feed of grain for a period of four to six months and are highly fattened. When slaughtered they will dress out from sixty-three to sixty-five per cent of carcass to live weight.

"Prime" means the first or highest grade. When applied to heifers, cows, hogs, lambs and sheep it has a meaning similar to that described for steers.



Guarantee SPREADER
REG. U.S. PAT. OFF.
Notice the patented money and labor saving features of the GUARANTEE SPREADER. YEARS AND YEARS AHEAD of other make spreaders. It's as perfect as human skill can make it. Fully equipped with eight points of perfection not found on any other spreader. Made to save your time, ground limestone and commercial fertilizers. Made to SPREAD these fertilizers evenly or sow in rows. Thrown in and out of gear from seat with shifting clutch. Mix your lime and fertilizer with the soil before they become wet and ruined, harrow your land at the same time. Let one man, boy or girl do the work of ten men and five horses. WRITE US TODAY FOR OUR MONEY SAVING OFFER AND FREE CATALOG.
GUARANTEE MANUFACTURING COMPANY
Department B-90, WOODSBORO, MARYLAND

Registered Seeds At Association Prices
Oats, Barley, Soy Beans, Corn, etc., registered by the Crop Improvement Ass'n. These proven Michigan-grown seeds, inspected by the association, are supplied At Association Prices
Oats \$1.60 to \$1.25 per bushels; Barley—\$1.15 to \$1.75 depending on size of orders. Equally attractive prices on clover, alfalfa and other field seeds.
SEED DEPT.
MICHIGAN STATE FARM BUREAU
221-7 N. Cedar Street, Lansing, Mich. (1)



BOWSHER'S HEAVY-DUTY GRINDERS
FOREMOST AMONG BETTER GRINDERS
Crush and grind all the grains that grow; fine for hogs or coarser for cattle feeding. Corn in husk, Head Kafirs, and all small grains.
Strength, Durability and Service radiate from every line of these Masterful Grinders. Simple but effective in adjustment.
LIGHT RUNNING—LONG LIFE—EXTRA CAPACITY
CONE-SHAPED BURRS
10 sizes—2 to 25 H.P. or more. Also Sweep Mills. It pays well to investigate. Catalog FREE.
The D.N.P. Bowsher Co., South Bend, Ind.

Save on Seeds

Get matchless bargains and sure yields by planting ADAMS' QUALITY SEEDS, cleaned, graded and tested by special machinery in our model seed plant—sold subject to approval and state college tests—World's Standard Grass Seed, Seed Corn, Seed Corn, Vegetable Seed, Flower Seed, etc.—the varieties that will produce BOUNTY in your latitude. Samples and expert advice on crop growing FREE.

MONEY-SAVING CATALOG
FREE
Digest book we've over-issued—profuse with illustrations, interesting—quotes wholesale prices on spots of guaranteed goodness. Write for it and learn how and why we can save you on sure-growing seeds of high purity and germination test.
The Adams Seed Co. Box 18 Decatur, Ia.

Fleece Wool Wanted

We are paying the following prices for fleece wool f. o. b. Detroit.
Delaine 33c
Fine Clothing 24c
1-2 blood combing 26c
3-8 " " 24c
1-4 " " 22c
Rejects " 15c

Wool sacks furnished for packing wool. Check sent on receipt of wool.

Traugott Schmidt & Sons,
508-560 Monroe Ave., Detroit, Mich.
Capital \$1,750,000.

Prices Reduced On Strawberry Plants
\$3.75 per 1000. This offer is good only from this advertisement and mentioning this paper. Senator Dunlop, Warfield, Brandywine and Gibbons at \$3.75 per 1000; \$2 for 500; \$1.25 for 250, not prepaid; 100 for \$1.00 postpaid—guaranteed, or will ship plants by express. You pay after examining them. They must please or no sale. Fifty other varieties at other prices. My plants and courteous treatment should induce every grower to use them. It will pay you to write for my FREE Price List of fruit grapes and everything to plant. Write J. G. Prestage, Prop., The Allegan Nursery, R. 3, Allegan, Mich., and be a pleased customer.



Read about Pyrox, the combined poison and fungicide, in the April 9th issue of this paper.

WOOL

Woolen mills, as well as wool dealers, are not endeavoring to accumulate big stocks, but are purchasing in a hand-to-mouth manner. This policy which they have pursued for months leaves more than half of the 1920 clip in the hands of the grower. Buying in the west is decidedly limited although the new clip is already beginning to come off. One sale of Utah wool is reported at a price of about 25 per cent of that of early May of last year. Pulled wools show more strength than the fleece wools and a sale of nearly a million pounds at Chicago was reported early the past week. Foreign auctions developed a firmer tone when the failure of tariff legislation caused a resumption of American buying. The woolen goods trade appears to be in a healthy state as mills are satisfied with the demand and orders already obtained will necessitate mill operation for a number of weeks. Additional purchases of raw wool are expected as a result of these sales of cloth. The American Farm Bureau Federation reports sales of wools from various state pools. Prices are approximately as follows: Delaine 40@41c; fine staple 33@34c; one-half-blood 30@32c; three-eighths-blood 27@28c; one-quarter-blood 25@26c. These prices are for bright wools. Semibright wools bring three to four cents less. Low quarter-blood wools have sold for 18@20c and seedy, burry and off-grades for 13@17c per pound.

NATIONAL CROP REPORT.

The Crop Reporting Board of the Bureau of Crop Estimates makes the following estimates from reports of its correspondents and agents:

The amount of corn on farms in the United States on March 1, 1921, was about 1,572,397,000 bushels, or 48.6 per cent of the 1920 crop, against 1,070,677,000 bushels or 37.5 per cent of the 1919 crop on farms March 1, 1920, and 855,269,000 bushels, or 34.2 per cent of the 1918 crop on farms March 1, 1919. About 21.4 per cent of the crop will be shipped out of the counties where grown, against 16.3 per cent of the 1919 crop and 14.5 per cent of the 1918 crop so shipped. The proportion of the 1920 crop which is merchantable is about 87.0 per cent (equivalent to 2,811,266,000 bu.), against 87.0 per cent (2,486,296,000 bushels) of the 1919 crop and 82.4 per cent (2,062,041,000 bushels) of the 1918 crop.

The amount of wheat on farms on March 1, 1921, was about 207,591,000 bushels or 26.4 per cent of the 1920 crop, against 164,624,000 bushels or 17.6 per cent of the 1919 crop on farms March 1, 1920, and 128,703,000 bushels or 14.0 per cent of the 1918 crops on farms March 1, 1919. About 58.4 per cent of the crop will be shipped out of the counties where grown, against 60.3 per cent of the 1919 crop and 58.8 per cent of the 1918 crop so shipped.

The amount of oats on farms March 1, 1921, was about 689,566,000 bushels, or 45.2 per cent of the 1920 crop, as against 418,983,000 bushels, or 34.0 per cent of the 1919 crop on farms March 1, 1920; and 590,251,000 bushels, or 38.4 per cent of the 1918 crop on farms March 1, 1919. About 28.2 per cent of the crop will be shipped out of the counties where grown, against 26.0 per cent of the 1919 crop and 27.4 per cent of the 1918 crop so shipped.

The amount of Barley on farms on March 1, 1921, was about 69,836,000 bushels, or 34.6 per cent of the 1920 crop, against 36,848,000 bushels, or 22.8 per cent of the 1919 crop on farms on March 1, 1920, and 81,746,000 bushels, or 31.9 per cent of the 1918 crop on farms March 1, 1919. About 36.4 per cent of the crop will be shipped out of the counties where grown, against 35.0 per cent of the 1919 crop and 39.0 per cent of the 1918 crop so shipped.

HORSE BREEDERS' SALE.

The Michigan Horse Breeders' Association held their annual sale at the Michigan Agricultural College February 24. While the prices were not sensational yet consignors were well satisfied with settlements made. All of the animals were sold with prices averaging as follows: Eight grade horses averaged \$198; sixteen pure-breds of working age averaged \$240; eleven young colts and stallions averaged \$167.

The sale was deemed a success because of the downward tendency in the price of all commodities and the tight money situation.—R. S. HUDSON, Secretary-treasurer M. H. B. A.

THE CLAN CALL.

This is the title of a new serial, the first installment of which appears in this issue. See page 386.

Your earning power when it rains is made sure by TOWER'S FISH BRAND REFLEX SLICKER
Look for the Reflex Edge
A.J. Tower Co.
Established 1836
Boston, Mass.

Cheaper in Price Yet Dependable

are the R. K. Double Tread Tires Retreated, and double chain stitched. In the Rural districts our tires are preferred to others because they stand the abuse on rough roads so well—yet are cheap in price and we guarantee them even at these little prices.

Size	Price	Size	Price
30x3	\$ 6.50	38x4	\$10.00
30x3 1/2	7.50	34x4	10.50
32x3 1/2	8.00	34x4 1/2	12.00
31x4	10.00	36x4 1/2	12.00
32x4	10.00	36x4 1/2	13.00

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

R. K. Tire Company
837 No. Broad St., Dept. C, Phila., Pa.
Send for descriptive booklet and price list.
Good Territory Open for Live Agents.

Michigan Grown Soy Beans

Hardy stock, Michigan grown, selected for their proven high yield. It pays to use Northern grown seed because plants from such seeds have vitality, full of pep, make speedy, vigorous growth.

We handle all kinds of clovers and field seeds, Michigan grown.

Prices, per bushel
Ito San, \$5.50 Early Brown, \$5.00
Hollybrook, \$5.00 Manchu, \$5.50
Black Eyebrow, \$6.50

SEED DEPARTMENT
Michigan State Farm Bureau
221 N. Cedar Street Lansing, Michigan (3)

\$50.00 A WEEK

If you are a "live wire" you can easily earn a good salary in your spare time selling our automobile policies. Write for full information.

LIBERTY MUTUAL AUTO INS. CO.
Galster Bldg., Petoskey, Michigan

Salesmen Wanted to sell well-known line of oils, paints and roofings direct to farmers. Men average from \$100 to \$200 per week. Commissions paid weekly. Bonuses paid monthly. Wengard of Ohio made \$430 in one week; Meyers of Allen took 102 orders first month. Fine opportunity for live-wire salesmen. Shipping points: Cleveland, Chicago, Kansas City, Minneapolis. For complete proposition write CENTRAL PETROLEUM CO., Cleveland, Ohio

GRAPEVINES and Red Currant Bushes, No. 1, \$1.35 doz., 100 \$12. Ev'g Strawberries, 100 with Cl. Rose, \$1.95 postpaid lower Mich. 10,000 Dunlap Strawb'y only \$3. because the war is over now. Full price lists free. GOBLEVILLE MICH. NURSERIES.

Kentucky Tobacco

TWO YEAR OLD LEAF. Rich, Mellow, Nature Cured. Chewing and Smoking. SPECIAL TRIAL OFFER. 3 lbs. \$1.00 POSTPAID. KENTUCKY TOBACCO ASSN., Dept. 216, Hawesville, Ky.

Homespun Tobacco 10 lbs. \$3.00; 20 lbs. \$5.00; 100 lbs. \$20.00. FARMERS' UNION, Mayfield, Kentucky

Home Wanted on farm within fifty miles of Detroit for two boys aged four and six years. Address F. KIEL, 1811 Field Ave., Detroit, Mich.

Barn Paint \$1.35 Per Gallon
Get factory prices on all paints. We guarantee quality. We pay the freight. FRANKLIN COLOR WORK, Dept. M, Franklin, Ind.

Trained American Fox Hounds Rabbit and Skunk dogs all ages. Send stamp. W. E. LECKY, Holmesville, Ohio

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

HAY Apples, Potatoes Wanted Highest prices paid. E. L. RICHMOND CO., Detroit, Mich.

Farms and Farm Lands

Farm Lands For Sale

Choice Heavy Clay Loam Soil underlaid with limestone in Michigan's wonderful Clover Seed Belt—Price \$10.00 to \$30.00 per acre on time—near Onaway, Presque Isle County. These are Beech and Maple Lands from which the timber has been removed.

Let Clover and Alfalfa Seed Crops pay for your land—it is doing it for others HERE—Why not for you? (Entire fortunes often paid for out of a single crop of seed—the product of one bushel of seed.)

A small cash payment exacted, (and if desired only the interest the first and second years.) The amount of payments the third year and thereafter—until land is paid for—is measured entirely by returns from seed yields harvested yearly at the rate of 5 acres for every forty purchased. Do you catch the point?

What you receive for your Seed Crops yearly—be it big or little—establishes the amount of your yearly obligation on interest and payment from third year on.

While building the farm home you are not confronted with a fixed yearly cash payment that, if not paid promptly, often endangers the loss of your property, and in many cases discourages would-be settlers.

Your responsibility is limited to seeding stipulated acreage yearly—harvesting and marketing the seed crop and applying proceeds upon payment of land yearly until land is paid for.

Paying for a farm in Clover Seed Belt where Seed Crops average \$100.00 per acre, entails no hardship for the dairyman or stockman—as the hay and chaff crops more than pay the expense, leaving the seed Crops as the mortgage lifter.

THAD. B. PRESTON
ONAWAY, MICH.

\$1400 Secures 210 A. With Horse 25 Dairy Cattle, and

Modern, machinery, produce, etc.; buildings estimated worth \$800; income last year \$500; wood and timber to nearly pay for all; convenient all advantages; 100 acres machine-worked, 3 tons hay, 850 bu. potatoes, 125 bu. corn to acre; apple orchard; equipped sugar grove; fine 9-room house; 100-ft. barn, etc.; prosperous owner wishing to retire, sacrifices; \$6500 gets everything; easy terms. See page 32 Spring Catalog 1100 Bargains. Just out. FREE. STROUT AGENCY, 814 BC Ford Bldg., Detroit, Mich.

FARMS FOR SALE

100 acres off good land; fine new buildings, good orchard; 25 acres of good timber; good roads three miles to car line. Price \$80.00 per acre. Farms from 5 to 500 acres at bargains. FRAY and VALLONE, 101 Gokey Building, Jamestown, N. Y.

FOR SALE—Opening a new tract of fertile farm lands well located in the great potato and dairy district of Wisconsin and Michigan. Secure first choice now. Liberal terms. Write for free booklet, etc. Sanborn Company, No. 29, Sanborn Bldg., Eagle River, Wisconsin.

CENTRAL WISCONSIN FARMS and cutover lands. Silt loam, clay subsoil. No sand or swamps. A wonderful clover section. Prices very reasonable. Write for list. OWEN REALTY CO., Owen, Wis.

Several Modern 80 to 400 Acre Lapeer County Farms. From \$100 to \$150 the acre. No better farms anywhere at any price. ELMER HOLMAN, Realtor, Lapeer, Mich.

Farms and Homes in Delaware where the climate is pleasant, the lands productive and prices reasonable. For information write, State Board of Agriculture, Dover, Del.

For Sale 80 acres all under plow. 2 horses, 4 cows, 5 hogs, 80 chickens, and full line of farm implements. Good buildings. Orchard. At \$4100. Easy terms. Write John Conant, Grand Haven, Mich.

If richest soil, cheapest land, finest climate, fruit, gardening, poultry, dairying, natural gas interests you write Chamber Commerce, Basin, Wyoming, Illus. booklet Basin Facts.

Small Farm For Sale or Trade near town. Willis Bradley, Bedford, Va.

WANTED To hear from owner of land for sale. O. K. HAWLEY, Baldwin, Wis.

Big Bargain: 100 acres, fine house, large barn, creek, only \$1500 needed, write for pictures. DeCoudres, Bloomingdale, Mich.

FARM HELP

WANTED married man who has farming tools and equipment to work 20 acre farm on shares. Good land and buildings. Near Clarkston, Oakland County. F. B. WRIGHT, 229 Gratiot Ave., Detroit, Mich.

WANTED position on farm, single, one year at agricultural college, also practical experience. B.H. Stickle, Three Oaks, Mich.

Wanted single middle age man to work on ranch, must have stock experience. Position open April 1st. CHAS. D. HARSCH, Siloam, Mich.

HORSES

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

Good Clubbing Offers

OFFER No. 301.

Michigan Farmer, one year.....\$1.00
McCall's Magazine, one year.... 1.50

Total value\$2.50
Both for \$1.75.

OFFER No. 302.

Michigan Farmer, one year.....\$1.00
Woman's World, one year..... .50
American Women 50

Total value\$2.00
All for \$1.55.

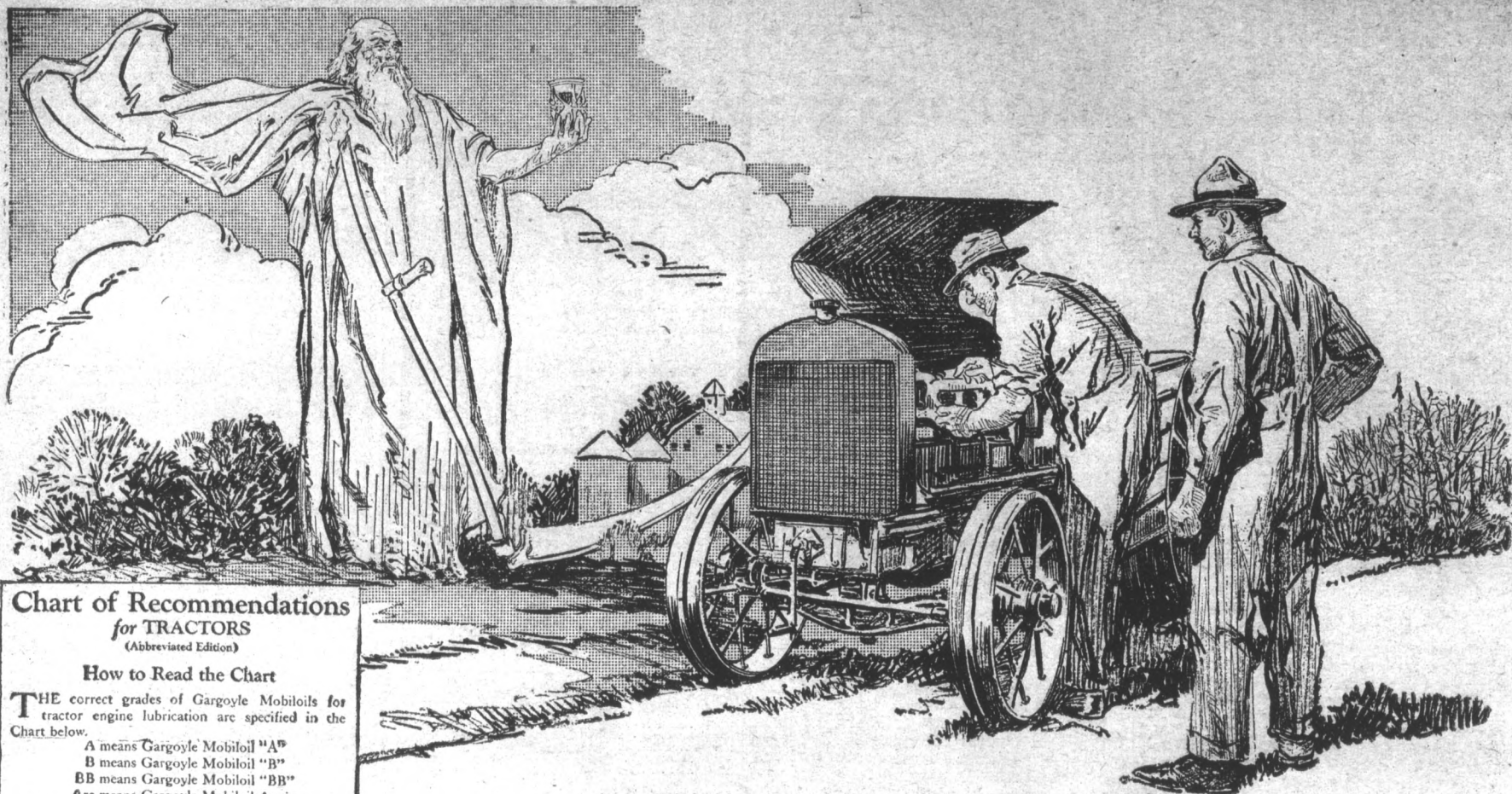


Chart of Recommendations for TRACTORS

How to Read the Chart

THE correct grades of Gargoyle Mobiloils for tractor engine lubrication are specified in the Chart below.

A means Gargoyle Mobiloil "A"
B means Gargoyle Mobiloil "B"
BB means Gargoyle Mobiloil "BB"
Arc means Gargoyle Mobiloil Arctic

These recommendations cover all models of tractors unless otherwise specified.

Where different grades of Gargoyle Mobiloils are recommended for summer and winter use, the winter recommendations should be followed during the entire period when freezing temperatures may be experienced.

This Chart is compiled by the Vacuum Oil Company's Board of Automotive Engineers, and constitutes a scientific guide to Correct Tractor Lubrication.

If your tractor is not listed in this partial chart, consult the Chart of Recommendations at your dealer's, or send for booklet, "Correct Lubrication for Tractors," which lists the Correct Grades for all Tractors.

NAMES OF TRACTORS	1920	1919	1918	1917	1916
Allis-Chalmers General Purpose	A	A	A	A	A
Allis-Chalmers All Other Models	BB	BB	BB	BB	BB
All Work	A	A	A	A	A
Appleton	BB	BB	BB	BB	BB
Autumn-Laylor (18-30)	A	A	A	A	A
" (22-45)	A	A	A	A	A
" (15-30) (Wardens Eng.)	BB	BB	BB	BB	BB
" All Other Models	B	B	B	B	B
Avery (5-10)	A	A	A	A	A
Baker Cultivator & Planter	A	A	A	A	A
" All Other Models	B	B	B	B	B
Bates Steel Mule	B	B	B	B	B
Bea-Tractor-Bull	B	B	B	B	B
Big Bull	B	B	B	B	B
Buckeye (Findlay, Ohio)	B	B	B	B	B
Case (9-18)	BB	BB	BB	BB	BB
" (10-18)	BB	BB	BB	BB	BB
" (10-20)	BB	BB	BB	BB	BB
" (12-25 & 20-40)	BB	BB	BB	BB	BB
" (15-27)	BB	BB	BB	BB	BB
" All Other Models	BB	BB	BB	BB	BB
Cleveland	BB	BB	BB	BB	BB
Coleman	BB	BB	BB	BB	BB
Common Sense	BB	BB	BB	BB	BB
C. O. D.	BB	BB	BB	BB	BB
Craig	BB	BB	BB	BB	BB
Crescent Corp.	BB	BB	BB	BB	BB
E. H. (2-16)	BB	BB	BB	BB	BB
" (Revs.)	B	B	B	B	B
" All Other Models	B	B	B	B	B
Four City (20-35)	A	A	A	A	A
" All Other Models	BB	BB	BB	BB	BB
Fordson	BB	BB	BB	BB	BB
Gas Pull	BB	BB	BB	BB	BB
Grain Belt	BB	BB	BB	BB	BB
Happy Farmer	BB	BB	BB	BB	BB
Hart Parr.	BB	BB	BB	BB	BB
Holler	BB	BB	BB	BB	BB
Houston	BB	BB	BB	BB	BB
Hollis	BB	BB	BB	BB	BB
Holt Caterpillar (Model 18)	BB	BB	BB	BB	BB
" (Model 45)	BB	BB	BB	BB	BB
" All Other Models	BB	BB	BB	BB	BB
Huber	BB	BB	BB	BB	BB
Illinois	BB	BB	BB	BB	BB
Indiana	BB	BB	BB	BB	BB
K. C. Prairie Dog	BB	BB	BB	BB	BB
La Crosse	BB	BB	BB	BB	BB
Liberty	BB	BB	BB	BB	BB
Lightfoot	BB	BB	BB	BB	BB
Minneapolis	BB	BB	BB	BB	BB
Mogul (6-16)	BB	BB	BB	BB	BB
" All Other Models	BB	BB	BB	BB	BB
Moline Universal	BB	BB	BB	BB	BB
Monarch	BB	BB	BB	BB	BB
National	BB	BB	BB	BB	BB
Neverlip (20-12)	BB	BB	BB	BB	BB
" (10-18, 10-6)	BB	BB	BB	BB	BB
" All Other Models	BB	BB	BB	BB	BB
New Age	BB	BB	BB	BB	BB
Nihon	BB	BB	BB	BB	BB
Oil Pull (14-28, 10-20)	BB	BB	BB	BB	BB
" (12-20, 16-30)	BB	BB	BB	BB	BB
" (20-40)	BB	BB	BB	BB	BB
" All Other Models	BB	BB	BB	BB	BB
Parrett	BB	BB	BB	BB	BB
Pioneer	BB	BB	BB	BB	BB
Rever	BB	BB	BB	BB	BB
Rumely (8-16)	BB	BB	BB	BB	BB
" (12-24)	BB	BB	BB	BB	BB
" All Other Models	BB	BB	BB	BB	BB
Russell (Grand)	BB	BB	BB	BB	BB
Sandusky	BB	BB	BB	BB	BB
Square Turn (15-30)	BB	BB	BB	BB	BB
" (18-35)	BB	BB	BB	BB	BB
Tam	BB	BB	BB	BB	BB
Tea-Sp.	BB	BB	BB	BB	BB
Towsend	BB	BB	BB	BB	BB
Trundlar	BB	BB	BB	BB	BB
Turner Simplicity	BB	BB	BB	BB	BB
Twin City (Model 15)	BB	BB	BB	BB	BB
" (Model 16)	BB	BB	BB	BB	BB
" (Model 12-20)	BB	BB	BB	BB	BB
" (Model 20-35)	BB	BB	BB	BB	BB
" All Other Models	BB	BB	BB	BB	BB
Valis	BB	BB	BB	BB	BB
Wallis	BB	BB	BB	BB	BB
" Cub	BB	BB	BB	BB	BB
" (Junior)	BB	BB	BB	BB	BB
Wardlaw Boy	BB	BB	BB	BB	BB
Whitney	BB	BB	BB	BB	BB
Winconsin	BB	BB	BB	BB	BB

The Decisive Year

Utmost economy will help you over it

IN answer to the universal cry for production, most American farmers invested their profits to render their farms more efficient. Many of them drew heavily on future profits.

Today prices have dropped. Bankers are calling loans and restricting credit. Many farmers view the future with anxiety.

These conditions are temporary. Food is a prime necessity. Authorities state that it is a question of weathering safely the next year.

This can be done by the utmost economy.

Soon the plowing will begin. Your tractor will daily need gallons of fuel and its ration of oil. Gargoyle Mobiloils when used as specified in our Chart of Recommendations mean dollars and cents saved because they mean gallons of fuel and oil saved. At the height of the season, time is of utmost value.

The tractor which unexpectedly breaks down eats up money. Men lose time. Repairs and parts must be paid for. The delay itself often affects crops. The correct grade of Gargoyle Mobiloils helps your tractor

to stay in harness when you most need it.

Cheap oils are a waste of money. True, they cost less. But the poor lubrication they supply is often a vital factor in shortening the life of machinery. Cheap oils steal the power your tractor needs for pulling. They cause mostly breakdowns and excessive repair bills.

In hundreds of public and private tests Gargoyle Mobiloils have shown a saving of oil from 50% to 70% and a fuel economy from 17% to 25%. The Vacuum Oil Company was the first to supply petroleum lubricants to automobiles and has ever since been recognized as the leaders in the science of lubrication throughout the world.

Gargoyle Mobiloils will give you utmost economy in the lubrication of your most valuable equipment—tractors, trucks and automobiles.

At the end of the year this means a tidy sum of dollars and cents saved.

The chart shown here indicates exactly what grade of Gargoyle Mobiloils will give you best engine results from your tractor.



Mobiloils

A grade for each type of motor

In buying Gargoyle Mobiloils from your dealer, it is safest to purchase in original packages. Look for the red Gargoyle on the container.

DOMESTIC
BRANCHES:

New York
Boston

Philadelphia
Pittsburgh

Detroit
Chicago

Minneapolis
Indianapolis

Kansas City, Kan.
Des Moines

VACUUM OIL COMPANY

Specialists in the manufacture of
high-grade lubricants for every class of machinery.
Obtainable everywhere in the world.

NEW YORK, U.S.A.